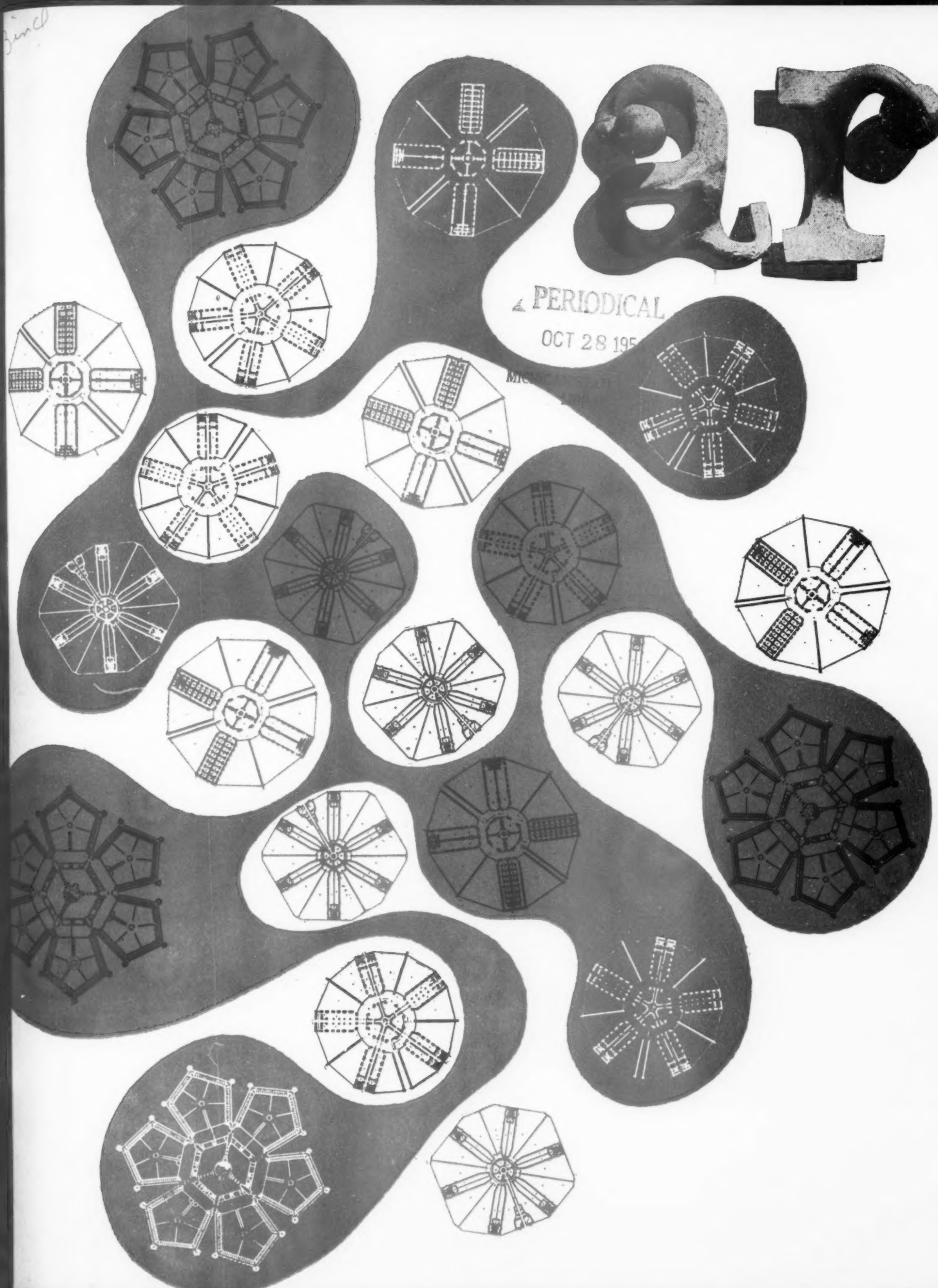


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## MARGINALIA

### Brazil Biographies

Though the pioneering foundations had already been laid by Lucio Costa and Gregorio Warchavchick by the beginning of the 'thirties, one of the fathers of modern Brazilian architecture was undoubtedly the late President Vargas, whose Minister of Education, Dr. Capanema, instigated the scheme which produced the celebrated Health and Education Building—an object of architectural pilgrimage for visitors, one of the world's best-known buildings, its design and construction a school of experience in which a generation of architects were confronted with the ideas and personality of Le Corbusier. Of the architects whose work appears in this issue, Oscar Niemeyer, Affonso Reidy and Jorge Moreira were all three of them collaborators with Lucio Costa in the design of this building, which is one of the finest monuments of the Vargas regime. Brazilian architecture is in a flourishing condition and it is certain that further works of merit will come from architects like those whose buildings appear on pp. 241-250, and whose biographies appear in brief below.

**Sergio Bernardes**, architect of the swimming pool near Rio de Janeiro and a house at Petropolis, was the subject of a biographical note in AR for March 1954 when his Bial prize-winning house was illustrated.

**Rino Levi**, architect of a house in Sao Paulo, Students' Hostel and Maternity Hospital for Sao Paulo University, still works in and for his native city, where he was born in 1901, and where he studied first, but he left Sao Paulo to continue his studies, first in Milan, then in Rome. His major works in Sao Paulo include a large apartment block in 1930, the *Universe* cinema of 1937, hospitals and academic buildings.

**Icaro de Castro Mello**, architect of the Fourth Centenary and University stadia in Sao Paulo, was born at Sao Vicente in 1913 and studied in Rio de Janeiro. He is well known for his work on gymnasia and sports arenas, including the Guarany football club ground, and his work for the YMCA in Sao Paulo.

**Ariosto Mills**, architect of the Hydraulics Research Laboratory, University of Sao Paulo, was born at Jundiá, in the State of Sao Paulo, in 1912, and is a distinguished teacher and designer, with a technological bent. He is at present Professor of Architecture at Sao Paulo University, and chairman of the *Companhia Construtora Module Engenharia-Arquitetura*.

**Jorge Machado Moreira**, architect in charge of the buildings for the new University city for Rio de Janeiro, including the pediatric clinic for which he was awarded one of the Bial prizes, first came to public notice as one of the collaborators on the Ministry of Education building, and has subsequently kept up his connection with Affonso Reidy, with whom he designed a well-known office project for Rio Grande del Sul.

**Oscar Niemeyer Soares Filho**, architect of the Sao Paulo Fourth Centenary Exhibition, the

Kubitscheck project, Maua apartment scheme, flats in Sao Paulo and his own house at Gavea, is the best known outside Brazil of all Brazilian architects. Born in 1907, he worked in Costa's office after completing his training, collaborated on the Ministry of Education, and has become a brilliant and prolific designer. His works are too numerous to list in small compass, but it is often felt that the finest of them are those connected with tourism and social development in the state of Minas Gerais.

**Affonso Eduardo Reidy**, architect of a house at Jacarepagua, might be felt to have been represented by an unrepresentative work, since he is best known for his large scale developments. Nevertheless, this small house throws a new light on the creative personality of a very distinguished designer, born in 1909 of mixed Anglo-Brazilian parentage, who has combined a public appointment, as housing architect to the city of Rio, with great creative powers, his Pedregulho neighbourhood being one of the most admired public housing developments of the post-war epoch.

**Paulo Antunes Ribeiro**, architect of the Caramura building, Bahia, was born (1905) and studied in Rio de Janeiro, followed by town-planning studies in Paris. He already has a solid reputation as a designer of hospitals in and around Rio, including the Arnaldo da Moraes maternity hospital in Copacabana, but the elegance of Caramura seems to have launched him as an international figure. He has now succeeded Milton Roberto as President of the Institute of Brazilian Architects.

**The Roberto brothers, Marcello, Mauricio and the late Milton**, architects of a house at Jacarepagua, were born in 1908, 1921 and 1914 respectively, and it was Marcello who, after a visit to Europe, launched the family career in architecture with a number of widely-noticed houses. However it was the ABI building, designed in collaboration with Milton, which established their world-wide reputation and their position in Brazil.

### Architects in this Issue

**Architects of Leisure Showrooms** (see pages 265 to 268) are Challen and Floyd. Michael Floyd, born 1923, Bartlett School of Architecture 1940-50, served in the RAF for five years, Diploma in Town Planning 1952. Married, has three children and lives in Hampstead. Geoffrey Challen, born 1921, Bartlett School of Architecture 1939-50, served in the RE in West Africa and India for five years. Married to Helen M. Challen, also an architect. Born 1925, Bartlett School of Architecture 1942-50, she served three years as a nurse in the Red Cross at Roehampton. They have one daughter.

The partnership was discussed at college and started two years ago.



Left to right above Geoffrey Challen, Helen M. Challen and Michael Floyd, architects of Leisure Showrooms.

### The Queen's Beasts



The White Greyhound, of Richmond, one of the Queen's Beasts, is seen above in a drawing by Edward Bawden from one of the most handsome books which have appeared as by-products of the Coronation: *The Queen's Beasts* (Newman Neame, 8s. 6d.) with descriptive text by H. Stanford London, Norfolk Herald Extraordinary, and plates by Edward Bawden and Cecil Keeling. The sculptures of these beasts which stood outside the Abbey Annexe attracted some attention, but were not noteworthy as works of art, but the designs in this book emphasize once again that, for the artist with the right temperament, heraldry is a discipline in the best sense of the word—it may restrict his personal liberty, but it offers him the support of a tradition, an established language of stylizations, and a colour code whose laws are immutable, and yet curiously sympathetic to the mentality of the contemporary designer, as are the set forms of stylization as well.

### The Art of Re-issuing: II

The recovery of a masterpiece, such as *The Pleasures of Architecture* or *The Gothic Revival* (ARCHITECTURAL REVIEW August, 1954), poses the problem of representing to the public something which, however *démodé*, did at least have a definitive form, its last printing, and can stand on its own as a work of its period. The problem posed by *Space, Time and Architecture* when a third edition became necessary, and complete re-setting of the type became a

possibility, was of a quite different order. Though the basic thesis of the book is now sixteen years old—the Charles Eliot Norton lectures on which it was based were delivered in the academic year 1938–39—it has had no time to become a period piece for it has been through ten printings since 1941, and looks set for many more.

In the first edition preface, Siegfried Giedion set himself a noble aim—to establish a true, if hidden, unity, a secret synthesis in our present civilization—and for his method he set himself an equally elevated standard—History is not a compilation of facts, but an insight into a moving process of life. The first edition was true to both ideals, and his method enabled him to probe down into the inner mysteries of the Modern Movement. But very, very few students can have ever read the book in this light for his probing brought to the surface such a mass of historical facts, which are still hardly to be got at elsewhere, that *Space, Time and Architecture* has become an irreplaceable text-book, which one consults for dates, names and places, rather than for interpretative treatment. The inevitable consequence has been a demand for more facts, the less expected consequence of this has been the author's willingness to supply them—in spite of the quotation from Jacob Burkhardt which appears in the preface, to the effect that books should be let alone once written. For the second edition he shoehorned in material on Eiffel, Maillart and Aalto, thus playing havoc with his illustration numbers, and now for the third he has worked in a quantity of important new information on Renaissance and Mannerist Urbanism, on Mies van der Rohe, on Gropius, and on Le Corbusier, whose architectural biographies, in all three cases, he brings more or less up to date. All this should give great satisfaction to the scholiasts, but those who remember the streamlined impact of the close-knit first edition will find the third rather like a loosely assembled haggis. This is not to say that the new edition is a better or a worse book than the first, but simply that in the process of constant re-issuing it has become a different book, a compendious compilation of fact, containing quotations from a slimmer

work of interpretation.

*Space, Time and Architecture*, by Siegfried Giedion, third edition; Geoffrey Cumberlege, Oxford University Press, 70s.



AN EXHIBITION OF WOVEN AND PRINTED MATERIALS designed by students of the Textile School of The Royal College of Art recently staged at the Silk Centre. The presentation of these materials was entrusted to two third-year students in the Interior Design School, Joy Green and P. Roden, who devised an ingenious general background treatment of the punched cards used in weaving on jacquard looms. These, coloured natural or white, formed an appropriate coherent setting which was particularly effective when carried across a window, as shown above.

#### Royal Fine Art Commission

In 1953 the cost to the Nation of the Royal Fine Arts Commission was a little over three thousand three hundred pounds, and it dealt, in one way or another, with some one hundred and sixty identifiable problems—under twenty guineas per consultation that is, from a body of consultants whose names read like a cabinet of all the talents. With such a service available at what are, in practice, cut-price rates, it is worse than depressing that the Commission's report for 1953 should continue to wear that baffled and frustrated air which

has been noticeable for some years now. '... but too often it is either not consulted at all, or consulted at such a late stage that serious improvements cannot be considered.' So concludes the second paragraph of the report, making it only too clear that for too many public bodies the Commission is simply a rubber-stamp approval for the art work with which they hope to camouflage their disasters, and the City of London comes in for some criticism on this score. The new scheme for the South Bank, in which the Commission has obliquely played a creative part, receives a deserved pat on the back, as do the Electricity, Coal and Gas Boards, all of whom are beginning to realize that they save themselves money by consulting the Commission at an early date. Other authorities could save themselves time and money simply by reading paragraphs 9, 10, 11 and 12, which adumbrate some excellent principles for the redevelopment of central areas in historic towns, and might, with expansion, form the basis of a testament of advice to town-planners.

#### Corrections

On page 98 of the August issue the names of the artists of the mural paintings in Colchester Technical College should have read John O'Connor and Hugh Cronyn.

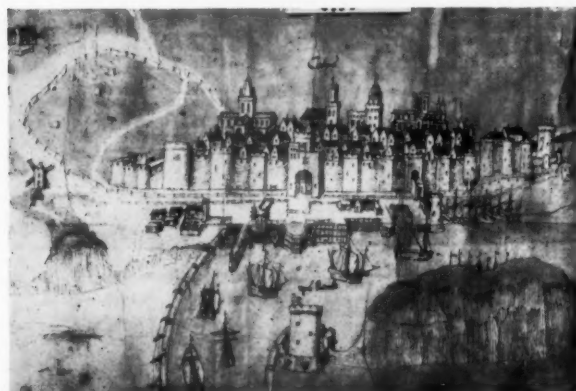
In the article entitled Bomarzo, published last month, acknowledgment should have been made to Mr. Philip Thiel for his help in collecting the illustration material.

#### Intelligence

The British Archaeological Association announces an annual competition in memory of the late E. Reginald Taylor. Details can be obtained from Mr. Cecil Farthing, 61, Egerton Gardens, London, S.W.3.

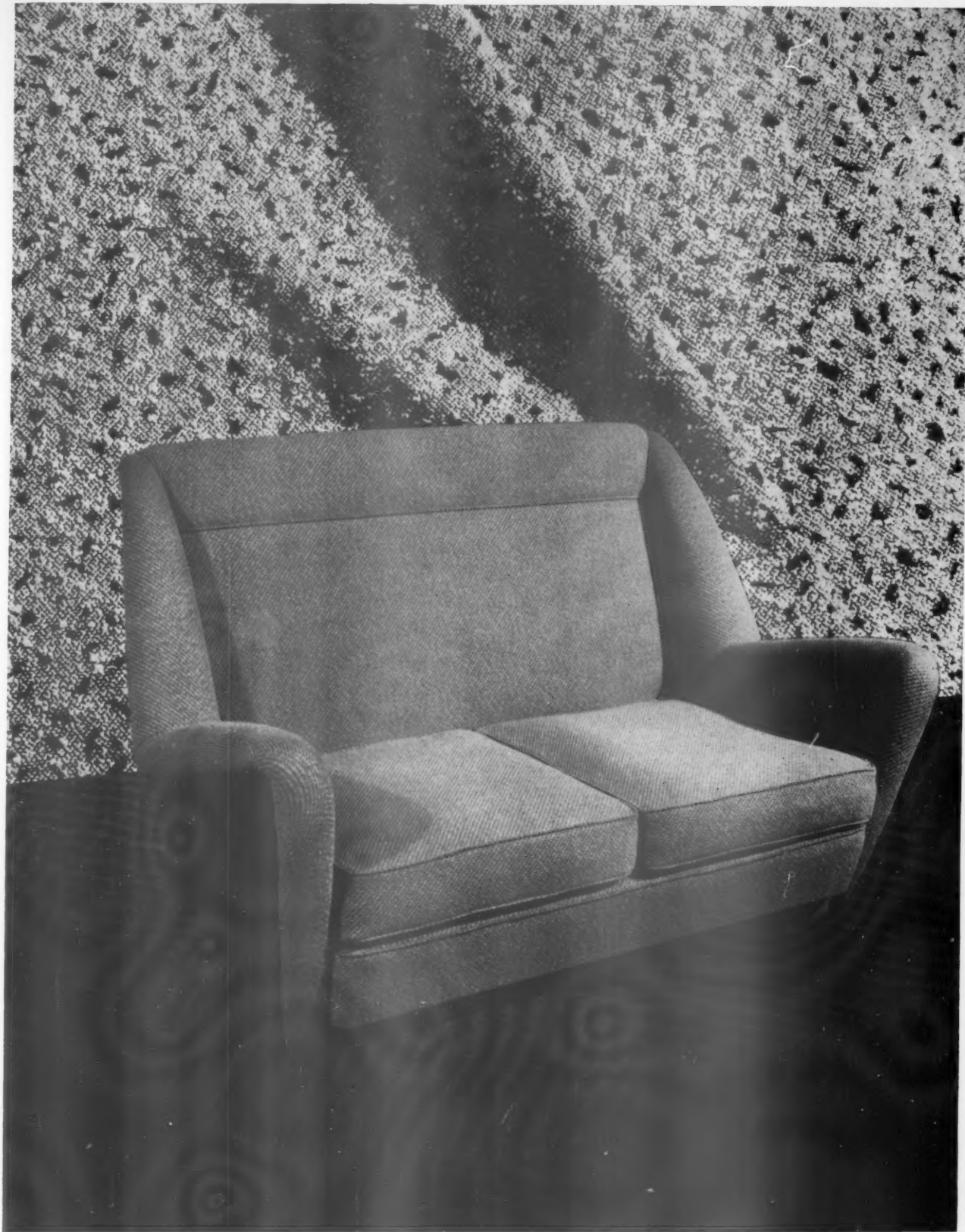
#### ACKNOWLEDGMENTS

COVER, Gordon Cullen. MARGINALIA, page 212: Mediaeval Topography, British Museum. FLATS AT GOSPEL OAK, pages 219–221, 1, 2, 3 and 6, Galwey, Arphot; 4 and 5, John R. Pantlin. FLATS AT PUTNEY HEATH, pages 222–225, 7, 10, 11, Galwey, Arphot; 8, 9, 12, John R. Pantlin. INDUSTRY EXPLOITED, pages 226–233, all photos by Kenneth Browne, except 28, Toomey, Arphot. REPORT ON BRAZIL, pages 234–250: Lanella & Moscardi; Albuquerque; Marcel Gautherot; Voltaire Fraga; Aertsens Michel; Nicolau Drie; P. C. Scheier. PATTERN OF THE LAW, pages 251–256, all illustrations Thomas A. Markus except 10: Ipswich & East Suffolk Record Office. CURRENT ARCHITECTURE, pages 257–258: Junior School at Oldbury: Galwey, Arphot; Shops at Richmond: John R. Pantlin. MISCELLANY, pages 259–264: Lettering: 1, Yan; 5, Edward Bawder; 6, 7, McCallum, Arphot; 8, Sam Lambert; 9, 17, Toomey, Arphot; 10, 14, 18, de Wolfe, Arphot; 11, 12, 13, 15, 16, Galwey, Arphot; 19, Kenneth Storey; 20, Nicolette Gray. Exhibitions: 1, 2, John R. Freeman & Co.; 4, 5, Arts Council; 6, Yves Hervochon. Townscape: de Wolfe, Arphot. Criticism: Ian Nairn. SKILL, pages 265–280, Interior: 1, 4, 7, John R. Pantlin; 2, 3, 5, 6, Architect & Building News. Design Review: 2, 3, Peerless & Ericsson; 7, 41, Henry Lewes; 11, 12, 13, 14, 16, 17, 18, Salisbury Photo Press; 22, 24, G.E.C.; 23, 25, R. & A. Main; 31, Alan Stewart; 39, Cona; 42, Studio Briggs; 44, Charles K. Bowers; 46, Douglas McLacklin; 47, Lewis & Randall.



MEDIAEVAL TOPOGRAPHY. To supplement the Flemish Exhibition held last winter at Burlington House the British Museum's Department of Prints together with the Manuscript Collection brought out some treasures to show the influence of Flemish on English art. For the architecturally-minded visitor there was plenty to see, including the two views shown above—left, a drawing of Calais, and right, an illumination to the Chronique of Henry V and Katherine of France, an imaginary town in a happy mixture of styles and periods. However muddled the detail may be, the imaginary town is not idealised, as it was to be later: there is less difference between it and the real town.



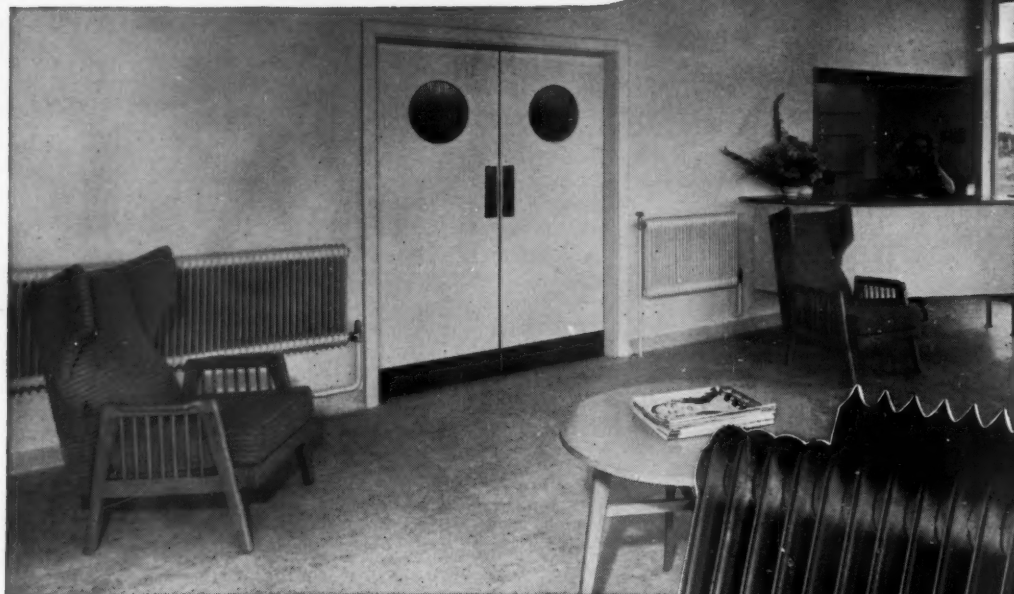


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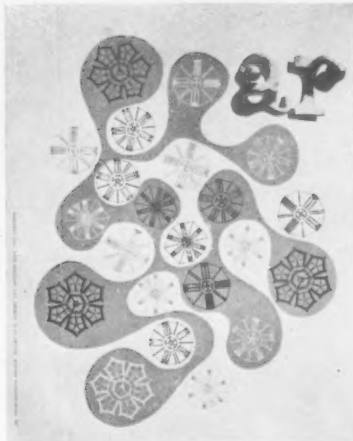
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# THE ARCHITECTURAL REVIEW

Volume 116 Number 694 Oct 1954



This month's cover, designed by Gordon Cullen, casts an oblique light on the nature of a dream that occupies the minds of many designers in this century—the wish for correspondence between man-made artefacts and the forms of nature. The elegant patterns on the cover, so like snow-flakes or other exemplars of growth and form, are plans of early nineteenth century prisons, and their regular centralized plans are the product of so abstracting and simplifying the concept of a prison as to make centralized supervision the dominant requirement. The development of this radial concept is described in Thomas Markus's article on pp. 251-256, but the moral, which is for all of us to ponder, would seem to be that elegant geometrical simplicity of form in man-made structures can only be had with very simple functions, or complex functions simplified almost to the point of ridicule.

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## 215 Play on Possum by Neville Ward

Though he has written only about literature, T. S. Eliot has promulgated such widely valid canons of criticism that they can be made to fit the other arts by simple transplantation of words, and Mr. Ward's article opens with a passage which by the substitution of architecture for literature, buildings for poems, and so forth, brings out a useful principle about the status of the great buildings of the past, and the way in which new buildings modify the value of the old. From this he proceeds to extend the application of Mr. Eliot's criteria on a wider front—the uses of revolution and innovation, the uses of polemic, consciousness of history and one's place in a historical development, the whole question of the validity and importance of tradition, the uselessness of decisions to be consciously Classical or consciously Romantic. In all this, Eliot's perceptive insight into the nature of poetic creation is capable of direct transference into the world of architectural creation, and it proves equally capable of transposition into problems of appreciation.

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Eliot's discussion of the difficulties one encounters in appraising a new and revolutionary poem pin-points psychological situations which also occur in appraising new and revolutionary buildings—the preference for the easy and second-rate, the unique moment of shock, pre-conditioning towards bewilderment, absence of familiar features by which works of art are recognized. Though these transpositions from poetic to tectonic criticism may be thought to lose something in being taken from their contexts they still perform a valuable service in drawing attention to something which might easily be overlooked in an age of specialization.

## 219 Flats at Gospel Oak: Architects, Powell and Moya

## 222 Flats at Putney Heath: Architect to the London County Council, Dr. J. L. Martin

226 Industry Exploited by Sylvia Crowe and Kenneth Browne Industrial structures, planned on a scale larger than the individual and his handicraft output, are notoriously difficult to accommodate visually to the man-made English countryside, or the two-storey English town, however well they may look in rugged mountain scenes, or the broad acres of the Fenland. On the fringes of our cities there is a squalid no-man's land of factories, railway-yards, stadia for mass sports, rubbish tips—at present a zone of disorder, but containing all the elements of an improved industrial landscape—large artefacts, mounds, changes of scale, flat areas of grass and water. The introduction of trees to make and shape the middle distance is the only element which needs to be added; but not trees half-heartedly planted in thin screens—trees must be planted with imagination and on a scale as bold as the rest of the scene. Since this is a programme requiring visual sensibility rather than paper instructions, the authors emphasise their points, and point their morals, with illustrations showing actual, and proposed, treatments of industrial scenery.

234 Report on Brazil The second Bial of Modern Art in Sao Paulo, Brazil, which took place early this year, drew to Brazil's second city a number of distinguished architects and critics from the old world. Their views make the first really authoritative report on the situation there since Goodwin and Kidder-Smith published their classic *Brazil Builds*. The report is in two parts, the first recording the views of Professor and Mrs. Gropius, Max Bill, Ernesto Rogers, Professor Ohye of Hosi, Japan, and Peter Craymer, a young English architect who has worked in various Brazilian offices and can thus give an inside view; the second part of the report illustrates buildings recently completed, or still on the drawing-board, which would have attracted the attention of visitors and helped to shape their view of the current situation in Brazilian architecture, and contains new work by Reidy, Niemeyer, Bernardes, Levi and others.

251 Pattern of the Law by Thomas A. Markus Among the more notable aspects of John Howard's late-eighteenth century campaign for prison reform is his manifest belief that better prison architecture will *ipso facto* effect an improvement in all other conditions. In spite of this his architectural ideas were not very advanced; they continued the English tendency to merely agglomerate the necessary structures within an architectural screen, in spite of the fact that Howard had seen, and praised, continental examples governed by an over-all formal plan. Though the reform movement and competitions for better prison designs did instigate a tendency toward regular and centralized plans in England, the greatest impetus came from Jeremy Bentham and his projects for Panopticons—buildings which, whether penal or industrial, were planned round the conception of supervision from one central control or look-out. These fathered a whole generation of prison designs which, though not adapted to panoptical supervision, nevertheless exhibited a model regularity and radial formality in their planning. Mr. Markus traces the growth and proliferation of all these ideas, and suggests that there may be a real value in these nineteenth-century gaol plans, in that they maintained the grand classical tradition of architectural solutions which were both functionally and formally satisfying at a time when such academic concepts were not in favour in other spheres.

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Authors Neville Ward, architect. Born in Lancashire, 1922; qualified at Liverpool University and Edinburgh College of Art. RIBA Hunt Bursar 1947; currently teaching at the AA School, and is one of three partners in the firm of Ward and Austin. Thomas A. Markus, architect, born 1928 in Budapest, qualified at Manchester University and has worked since in the Manchester City Architects' Office and as Assistant Lecturer at Manchester University. Took up a year's research Fellowship to the Massachusetts Institute of Technology in September.

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THE ARCHITECTURAL REVIEW

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FIVE SHILLINGS



Oscar Niemeyer's newest house, with its characteristic roof-plan, above, and its brusque confrontation with the elements of its landscape setting, below, probably represents the most free exercise possible of his remarkable talents, since it was designed for his own occupation. Comments upon this most Brazilian of houses have been frequent since the visit of many distinguished architects and critics to Sao Paulo for this year's Biennial exhibition, and the views of Ernesto Rogers, of Milan, will be found on p. 240, in a feature which gives the Brazilian impressions of a number of this year's visitors, and illustrates some of the recent work they saw there.

## oscar niemeyer's own house in rio de janeiro







for, the quoted statements are listed below. It must be understood that the epigraphs lack their full force by being divorced from their context. They serve the limited purpose of drawing attention to something which may not be obvious in an age of over specialization and segregation.

Eliot suggests that "it is the function of all art to give us some perception of order in life by imposing an order upon it"<sup>8</sup> and asserts that "art never improves but the material of art is never quite the same."<sup>1</sup> "What happens when a new work of art is created is something that happens simultaneously to all the works of art which preceded it. The existing monuments form an ideal order among themselves, which is modified by the new (the really new) work of art among them. The existing order is complete before the new work arrives; for order to persist after the supervention of novelty, the *whole* existing order must be, if ever so slightly, altered; and so the relations, proportions, values of each work of art toward the whole are readjusted; and this is conformity between the old and the new."<sup>2</sup>

A mistrust of revolution is not to be confused with an aversion to new modes of expression. Eliot accepts that "no generation is interested in Art in quite the same way as any other; each generation, like each individual, brings to the contemplation of art its own categories of appreciation, makes its own demands upon art, and has its own uses for art."<sup>4</sup> "In an ideal state of society one might imagine the good New growing naturally out of the good Old, without the need for polemic and theory. In a sluggish society . . . the violent stimulus of novelty is required."<sup>1</sup> This he accepts though he warns "this is bad for the artist and his school, who may become circumscribed and narrowed by their polemic."<sup>1</sup> It is clear that he is most emphatic as to the importance of tradition in art. ("The architect must develop or procure the consciousness of the past and . . . he should continue to develop this consciousness throughout his career. This historical sense . . . is what makes an architect traditional and it is at the same time what makes an architect most acutely conscious of his place in time, of his own contemporaneity."<sup>2</sup>)

The apparent paradox of Eliot who reveals great respect for tradition and yet has been the author of what is commonly held to be difficult and revolutionary poetry is a disquieting circumstance for those architects who use the word 'traditional' to mean 'revivalist', whether in a derogatory, adulatory or merely factual manner. It is his classification of the true meaning of tradition which is of particular value to the thoughtful architect and the value is enhanced by virtue of the fact that, because he is not tied to particular architectural example, his words are immediately *sensible* to anyone willing to consider their validity.

"Tradition," he writes, "is not solely, or even primarily, the maintenance of certain dogmatic beliefs . . . A tradition without intelligence is not worth having. . . . We are always in danger, in clinging to an old tradition, or attempting to re-establish one, of confusing the vital and unessential, the real and the sentimental. Our second danger<sup>3</sup> is to associate tradition with the immovable; to think of it as something hostile to all change; to aim to return to some previous condition which we imagine as having been capable of preservation in perpetuity, instead of aiming to stimulate the life which produced that condition in its time.<sup>5</sup> . . . If the only form of tradition, of handing down, consisted in following the ways of the immediate generation before us in a blind or timid adherence to its successes, 'tradition' should positively be discouraged . . . Tradition is a matter of much wider significance. It cannot be inherited, and if you want it you must

obtain it by great labour."<sup>2</sup>

He eliminates from serious consideration as an artist both the unreasoning revivalist and the architect who claims to have broken completely with the past. He deplores "a division between those who see no good in anything that is new, and those who see no good in anything else: the antiquation of the old, and the eccentricity and even charlatanism of the new, are both thereby accelerated. The effect of this failure of criticism is to place the serious architect in a dilemma: either to design for too large a public or to design for too small a public. And the curious result of either choice is to place a premium on the ephemeral. The novelty of a work of imagination which is only popular, and has nothing really new in it, soon wears off: for a later generation will prefer the original to the copy, when both belong to the past. And the novelty of anything that is merely new produces only a momentary shock: the same work will not produce the same shock twice, but must be followed by something newer."<sup>7</sup> This belief is amplified in other statements. "Romanticism and classicism are not matters with which creative designers can afford to bother overmuch, or with which they do, as a rule, in practice greatly concern themselves. . . . I doubt whether any architect has ever done himself anything but harm by attempting to design as a 'romantic' or as a 'classicist'. At the moment when one designs, one is what one is, and the damage of a lifetime, and having been born into an unsettled society, cannot be repaired at the moment of composition."<sup>6</sup> On the other hand there is a "tendency to insist when we praise an architect upon those aspects of his work in which he least resembles anyone else, (yet) if we approach an architect without this prejudice we shall often find that not only the best but the most individual parts of his work may be those in which the dead architects, his ancestors, assert their immortality most vigorously."<sup>3</sup> . . . The true experimenter is not impelled by restless curiosity, or by desire for novelty, or the wish to surprise and astonish, but by the compulsion to find, in every new building as in his earliest, the right form for feelings over the development of which he has, as an architect, no control."<sup>6</sup>

Eliot does not stop short at analysing the processes of creation. He is enviably lucid about the pleasures and difficulties of looking at architecture. "The experience of a building is the experience both of a moment and of a lifetime. It is very much like our intenser experiences of other human beings. There is a first, or an early moment which is unique, of shock and surprise, even of terror (*Ego dominus tuus*); a moment which can never be forgotten, but which is never repeated integrally; and yet which would become destitute of significance if it did not survive in a larger whole of experience; which survives inside a deeper and a calmer feeling."<sup>8</sup> "The experience of architecture, as it develops in the conscious and mature person, is not merely the sum of experiences of good buildings. Education in architecture requires an organization of these experiences. There is not one of us who is born with, or who suddenly acquires at puberty or later, an infallible discrimination and taste. The person whose experience is limited is always liable to be taken in by the sham or the adulterate article; and we see generation after generation of untrained observers being taken in by the sham and the adulterate in its own time—indeed preferring them, for they are more easily assimilable than the genuine article."<sup>4</sup> "The difficulty of architecture (and modern architecture is supposed to be difficult) may be due to one of several reasons. First, there may be personal causes which make it impossible for an architect to express himself in any way but an obscure way; while this may be regrettable, we should be glad, I think, that the man has been able to express



himself at all. Or difficulty may be due just to novelty; . . . Or difficulty may be caused by the observer's having been told, or having suggested to himself, that the building is going to prove difficult. The ordinary observer, when warned against the obscurity of a building is apt to be thrown into a state of consternation very unfavourable to architectural receptivity. Instead of beginning, as he should, in a state of sensitivity he obfuscates his senses by the desire to be clever and to look very hard for something—he doesn't know what—or else by the desire not to be taken in. There is such a thing as stage fright, but what such readers have is pit or gallery fright. The more seasoned observer, he who has reached, in these matters, a state of greater *purity*, does not bother about understanding; not, at least, at first. I know that some of the architecture to which I am most devoted is architecture which I did not understand at first sight; some is architecture which I am not sure I understand yet. And finally, there is the difficulty caused by the architect's having left out something which the observer is used to finding; so that the observer, bewildered, gropes about for what is absent, and puzzles his head for a kind of 'meaning' which is not there, and is not meant to be there."<sup>4</sup>

One of the most provocative aspects of Eliot's writing is that in which he makes comparative analysis of past and present. He enters a field in which final assessment is impossible in terms of architecture. It may be possible in literature and it is interesting to contemplate a possible parallel between what Eliot says of literature and what we do not yet know of architecture. Although he says of the middle nineteenth century that it improved nothing and was an age of progressive degradation he says elsewhere that "Even the second rate long poems (of this period) . . . are better worth reading than most long modern novels." Is it reasonable to substitute 'major works of architecture' for 'long poems' and 'major modern buildings' for 'long modern novels' or can it be claimed that the arts of the nineteenth century had a basis in literature whilst those of our time evolve from plastic discoveries?

Whatever the answer, Eliot seems to reassure the architect who strives for the really new: "the artist can always console himself for his errors in his old age by considering that if he had not fought nothing would have been accomplished."<sup>1</sup>

*Note:—The substitutions in the above quotations from Mr. Eliot's writings are made as follows:—*

*For poet(s), poetry and poem(s) : architect(s), architecture, building(s); for literature : architecture; for write and author or writer : design and designer; for readers : observers.*

*The sources of the distorted quotations are:—*

<sup>1</sup> 'Reflections on Vers Libre', New Statesman, March 3, 1917.

<sup>2</sup> 'Tradition and the Individual Talent', The Sacred Wood, Methuen, 1920.

<sup>3</sup> 'Dante', Faber & Faber, 1929.

<sup>4</sup> 'The Use of Poetry and the Use of Criticism', Faber & Faber, 1933.

<sup>5</sup> 'After Strange Gods', Faber & Faber, 1934.

<sup>6</sup> 'A Choice of Kipling's Verse', Faber & Faber, 1941.

<sup>7</sup> 'The Classics and the Man of Letters', Oxford University Press, 1942.

<sup>8</sup> 'Poetry and Drama', Faber & Faber, 1951.

## FLATS AT GOSPEL OAK

**ARCHITECTS**

**POWELL AND MOYA**

**Assistant Architect**

**M. Hurley**



1. view of the block between two of the terraces, showing the central well and access balconies. At the backs of the balconies, the facing is blue engineering bricks, and window frames are all white: elsewhere in the building the frames are black with white opening lights.

These flats have been built for the borough of St. Pancras on a site just south of Parliament Hill Fields. The site had never been developed, and was used as a junk yard—as the ground to the east still is—a most unexpected thing for a site of this size in an inner London suburb, and only to be explained as being sandwiched between an early Victorian estate layout and a complex of railways. The west side had a large mound of earth 20 ft. high, a spoil-tip from the railway cutting to the south, and the ten-storey block was built on top of this, with the three terraces running eastward from it at right angles.

The combination of opposites achieves a population density of 100 per acre, the same as would have resulted from an over-all use of four or five-storey blocks of flats. The saving in ground area has made it possible for the terrace houses to have small gardens, and the requirement that half the units should have four rooms or more has been neatly solved; all small flats are built into the tall block, and all the larger ones are made into terrace houses.

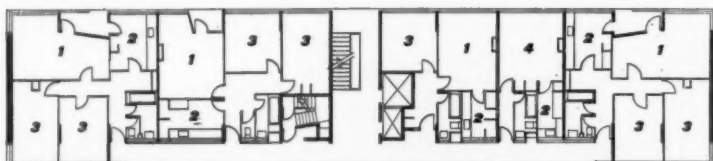
In the block, balcony access has been used (as in the

later Pimlico blocks, published in THE ARCHITECTURAL REVIEW in August, 1954); the balconies are kept short and do not overshadow living rooms. The main staircase, escape staircase and lifts are almost in the centre of the block, with three flats per floor on one side (one-room, two-room and three-room) and two (both three-room) on the other. All the terrace houses have four rooms.

The block of flats has mass concrete foundations, r.c. basement and an r.c. superstructure of 6-inch party walls and intermediate frames, generally exposed externally. Floors are prestressed precast beams combined with hollow clinker pots with structural concrete topping. The infilling to this frame is cavity brickwork and strip windows. The terraces have load-bearing brick walls and timber-joisted floors and roofs. The panels on the first floor have an outer skin of 4½-inch bricks, rendered, and an inner skin of 2-inch clinker blocks. The external facing of the block is flint lime bricks; of the terraces, yellow London stockbricks.

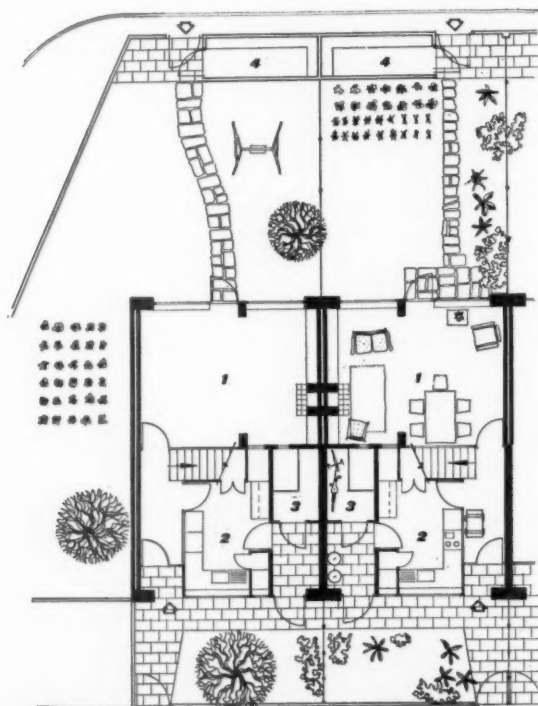
The block is faced with white flint lime bricks; the terraces are faced with yellow London stockbricks. The borough housing manager is A. W. Davey.

Opposite, the block from the south-east, 2, above, and from the south, 3, below, showing how it has been built on top of the existing mound.



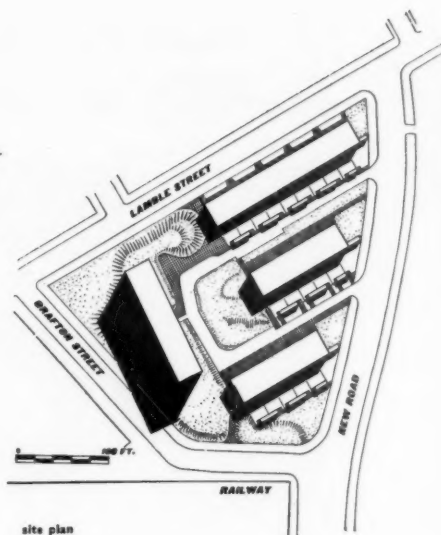
typical floor plan of tall block scale: 1/32 in. = 1 ft.

- key  
1, living room.  
2, kitchen.  
3, bedroom.  
4, bed-sitting room.

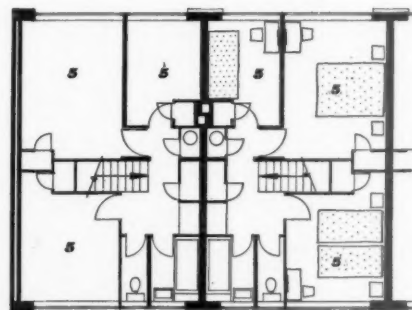


ground floor plan of pair of terrace houses scale: 1/16 in. = 1 ft.

- key  
1, living room.  
2, kitchen.  
3, store.  
4, garden store.  
5, bedroom.



site plan



first floor plan of pair of terrace houses.



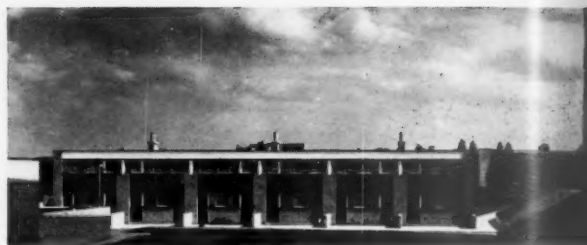
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#### FLATS AT GOSPEL OAK

4, a close-up of the south elevation of the block: the exposed concrete is painted dark red and light grey, with white soffits. 5, the rear of the block. The private balconies are painted in combinations of dark olive green, bright red and canary yellow. 6, the front of one of the terraces. The rendered panels are dark blue-black spatter dash finish; the porches and doors are painted in combinations of dark red, orange-red, yellow, olive green, grey, black and white.



## FLATS AT PUTNEY HEATH

**DR. J. L. MARTIN:** Architect to the London County Council

**H. G. GILLET:** Architect-in-charge

This point block of flats is on the Ackroydon Estate which the LCC are building in the borough of Wandsworth, on land developed with large detached houses about a century ago. Flats, maisonettes and houses are provided in buildings of various heights, including three identical 11-storey blocks, of which this is the first. It is in the grounds of Tudor Lodge, a mid-Victorian house which is now used as an LCC children's home. The original landscaping has been preserved, and a striking example of the effect of keeping the old trees can be seen in the view from the main Portsmouth Road; conversely, people living in the upper floors can see right across London. The over-all density for the whole

7, a typical distant view, the block seen above trees kept from the old estate. 8, opposite, view from the south-west, showing the south staircase; the staircase is painted turquoise blue, with one wall of the adjoining balcony painted yellow.



a.  
e  
y.





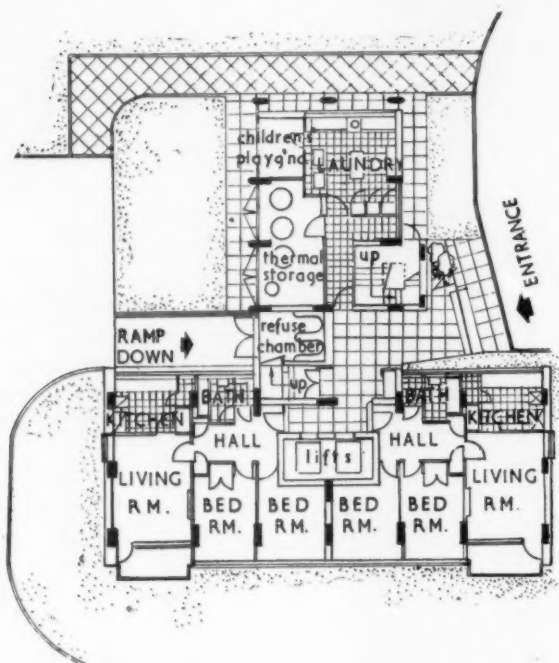
estate will be about 100 persons per acre—the same as at Gospel Oak.

The block contains 32 flats, three per typical floor; using a T plan each flat is treated as a separate wing, with a central core carrying two lifts, main and escape staircases and providing a balcony landing. In each flat the living room is at the end of the wing, with a large balcony the full width of the room; the kitchen opens directly from it at the other end. The space on the ground floor which would have been the thirty-third flat is a small communal laundry, with playroom attached.

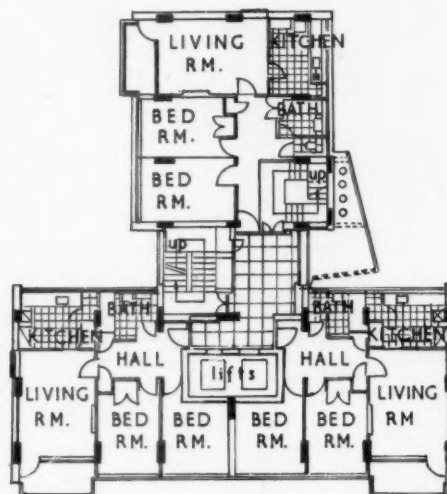
The structure is a r.c. frame with solid r.c. floors, which are cantilevered beyond the line of the columns, making the external walls continuous strips and permit-

ting windows to the full width of the rooms. The concrete aprons under the windows are cast with the floor slabs, and lined internally with three-inch woodwool for heat insulation and as permanent shuttering. The lift shaft is insulated from adjoining rooms by a cavity wall, and all floors are insulated from the structural floor by layers of fibreglass; the external end walls are cavity brickwork.

The end walls are faced with flint bricks, and the concrete aprons sprayed with a grey emulsion rendering; all other exposed concrete has been painted white. There are granolithic floors on landings and staircases, and thermoplastic tiles in the flats. The front doors to flats are glazed and painted green.

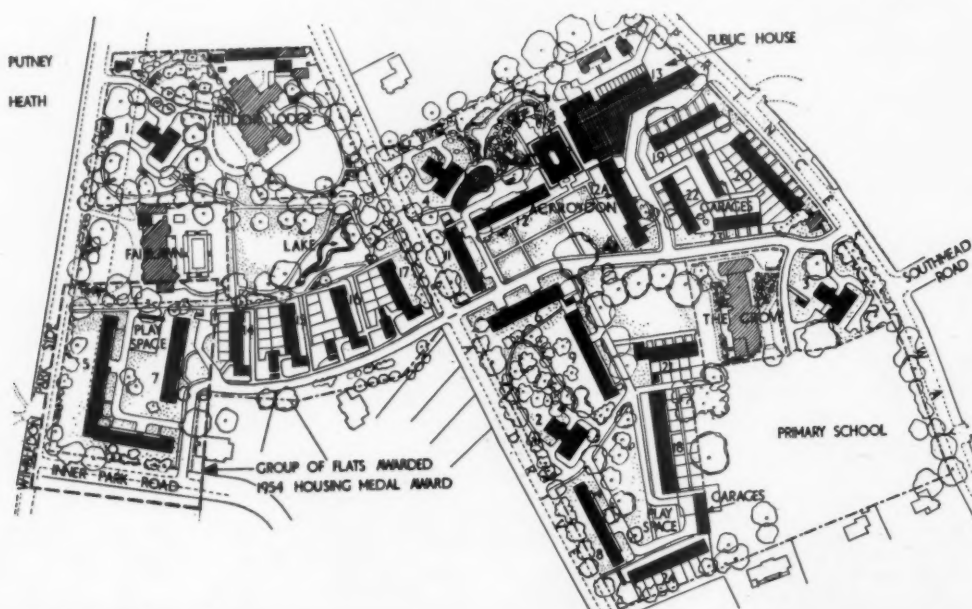


ground floor plan



typical floor plan

scale: 1/16 in. = 1 ft.



site plan: the block illustrated, 1, is in the north-west corner

- key
- 1-3, 11-storey flats.
  - 4, 8-storey flats.
  - 5, 6, 9, 5-storey flats.
  - 7, 4-storey flats.
  - 8, 10, 11, 12, 12A, 3-storey flats.
  - 13, shops and maisonettes.
  - 14-21, 4-storey maisonettes.
  - 22-24, 2-storey houses.

**FLATS AT PUTNEY HEATH**



9

9, the entrance; the communal laundry is on the ground floor of the right hand wing. 10, a close-up of the communal laundry wing. The walls visible on the private balconies are painted red. 11, the entrance canopy, painted white. 12, the south-east elevation from the garden of Tudor Lodge.



10  
11

12



Landscape out of joint. In this industrial scene (1) so typical of the outskirts of our cities, the giant shapes of a Lea Valley Power Station are seen across a wilderness of small scale clutter. (2) shows the good landscape which can result when, as at Brentford, massed trees and water are seen in conjunction with the industrial giant.



Sylvia Crowe and Kenneth Browne

# INDUSTRY EXPLOITED

Modern industry has a scale which is equally alien to the humanized English countryside and to the town for both these are related to the scale of the individual, while industry is based on mass-production and the crowd. Yet seen in an appropriate setting, industry provides some of the finest buildings of our times. Against the sweeping Cleveland hills or standing up from the wide, hedgeless fields of the Fens, their value can be appreciated. But amongst close-set, hedged fields they are as uncomfortable in scale as they are when towering over small dwelling-houses or competing with the one-time dominance of churches. But to deduce from this a policy of siting industry in open, large scale scenery would be not only absurd from the economic angle but inimical to the welfare of the landscape. Those of our landscapes which are greater than the scale of man are far too scarce and precious to be invaded unnecessarily.

But on the outskirts of our towns there is a ragged no-man's land where agriculture peters out between the urban fingers of railways, works and reservoirs, and where the city-dwellers come, not so often singly as in crowds, for such mass recreations as football and racing. Here in this backyard of the city is the opportunity to create a new landscape, tuned to the new scale, and using the three great landscape elements of land-form, water and trees.

With modern earth-moving machinery, and the tendency of industrial civilisation to throw up vast quantities of surplus spoil, there are opportunities which have never existed before for building new land-form. Instead of siting industry against existing hills, hills can be made where industry is to go.

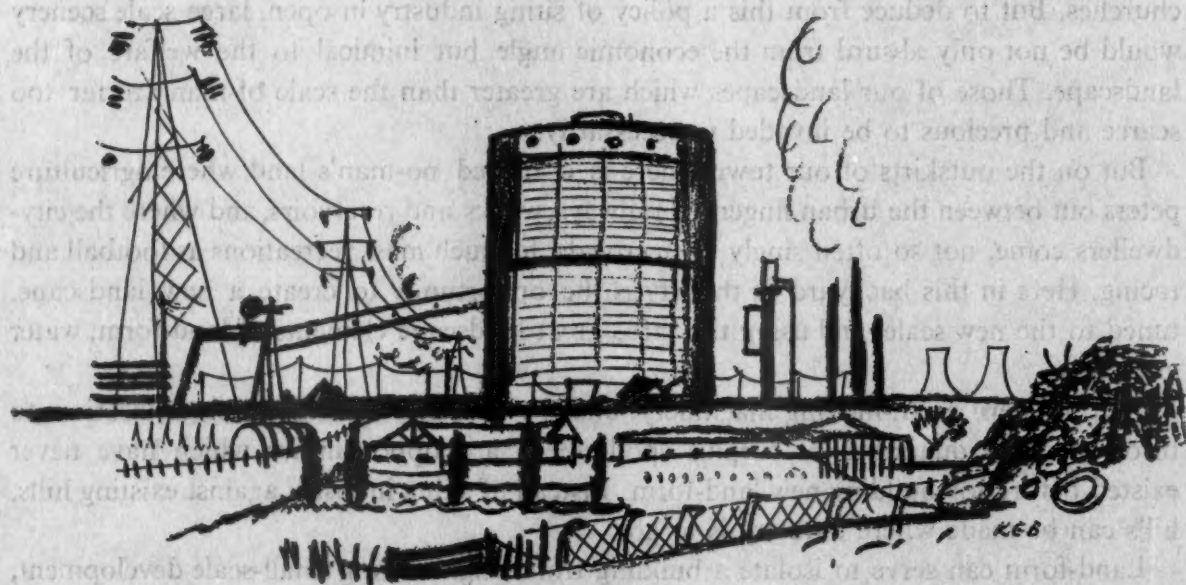
Land-form can serve to isolate a building from neighbouring small-scale development, substituting a quiet, massive background for a worried skyline of small buildings. Or its shape may be used to complete the composition of the building, particularly when, as in the case of some gasholders, the buildings are not themselves of good proportion.

While the city throws out great heaps of spoil in one place, it digs holes in others, and

in many of the city fringelands worked-out gravel pits add to the scars and disorder. Enough of these pits are flooded to show their potential value, both scenically and as lakes for boating, fishing and bird-watching. Nothing composes better with the scale of industry than a sheet of water, while reflected in it even untidy sheds and stacks of barrels take on a certain pictorial value. The squalor of the industrial lands is generally not caused by the buildings themselves, but by the litter of their backyards and by the unkempt wasteland which surrounds them. Any treatment which simplifies these surroundings will help to lift them from squalor, and water is the supreme simplifier. Fortunately a clear horizontal plane is given also by playing fields which form one of the chief land uses in the industrial suburbs. But while the stretches of water and grass will form the foreground to buildings, the view breaks down if it lacks a good middle distance and horizon. It is to complete these parts of the picture that trees are needed. Not single specimens, nor rows, but broadly massed trees, completing, in conjunction with land-form, the composition and background of the building's silhouette; blotting out the litter of posts and wires, unclimbable fences, and temporary sheds with which industry surrounds itself.

Attempts to plant to hide the building are not only an insult to its architecture, but, even when the building deserves it, seldom succeed; more often drawing attention to the object it is intended to conceal.

Equally unhappy is the small scale planting of little trees and shrubs, which cheapens that which should have grandeur. The English cottage garden tradition is for man the individual, not for man in the mass. It is rather the breadth of treatment with massed trees, open spaces and stretches of water which Le Notre found right for the crowds of the French court which comes back deformed and simplified to deal with the crowd-scale of our industrial landscape.



**THE PROBLEM** How to relate the massive forms of modern industrial plant, rising from a network of visually complicated lesser forms created by services and production, to the human scale of town and small scale countryside in such a way as to produce good landscape.



## ASSETS



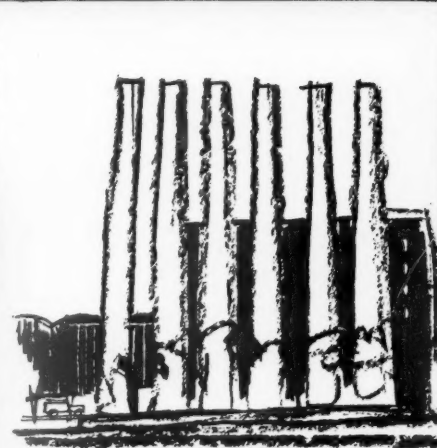
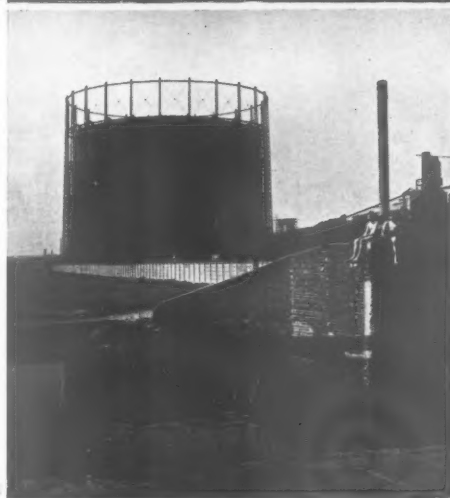
Let us first of all examine some of the typical *shapes of industry*—the raw material of the industrial landscape. These consist of:—

**MASSIVE FORMS** which on account of size and simplicity of shape make natural focal points for the landscape, for example:—

*Power Stations* whose huge diablo-shaped cooling towers and vertical stacks make fine compositions as at Enfield, 4.

*Gasometers* with their great metal drums rising in light latticework cages, 5.

*Chimneys* which when grouped as in this Midland brewery, 6, have a grandeur comparable with the columns of the ruined Temple of Baalbeck.



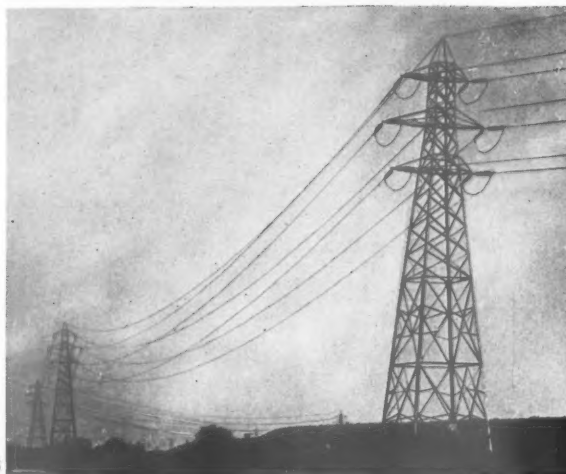
5, 6

**LESSER FORMS** such as:—

*Pylons*, 7, *cranes*, *gantries*, 8, whose spider-web latticework construction makes a splendid foil for the massive forms mentioned above and the transparency of which enables them to stand lightly on the natural landscape.

*Storage sheds* which are often admirable in shape as the timber sheds in the Lea Valley, 10, with their pleasantly undulating roofline.

Sometimes the *transport of industry* also can be a scenic asset, for instance when seen in the form of barges threading their way along the canals, 9.



7, 8



9

*all these can be the elements of good landscape . . . .*



10



.... or of bad

## FAILURE



The unplanned chaos which so often results in the **BACKYARD OF INDUSTRY**, 11. Untidy and formless timber storage, unrelated buildings and chimneys, unkempt waterway and wasteland of ungrazed grass with black fencing as the most dominant theme equals landscape out of joint. The



12

reservoir on the right is seen merely as a featureless embankment, the water which might have served as a unifying factor being at a higher level than the surrounding ground and therefore unseen. Failure to make good landscape is often in part due to the bad

design of industrial forms as, for instance, the cable pylon, 12, which is an unnecessarily heavy and aggressive addition to the canalside landscape in which it is placed, in contrast to 7, but more widespread and serious causes are:—

## scale

No problem arises in large-scale countryside such as the fens, for then the scale of industrial buildings and their setting is in harmony but:—

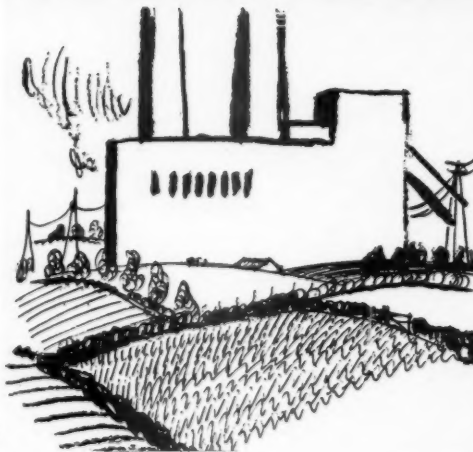
**IN SMALL-SCALE COUNTRYSIDE**, 13, seen against hedgerows and small fields, the industrial giant dislocates a peaceful scene whose attraction lies in small detail. **IN THE TOWN**, 14, the abrupt contrast in scale between the superhuman industrial construction and the man-sized houses and church from which it rises is incongruous and overpowering.

## wasteland

The surroundings of industry, as in these Lea Valley scenes, 15, 16, are generally a sordid no-man's land of unused grass, neglected agriculture, and disused quarries criss-crossed with a confusion of wires, railway track and forbidding fences and dotted with scrappy haphazard planting and rubbish shoots. These photographs give some idea of the large areas of land squandered in this way. Reservoirs which should be a scenic asset are seen merely as featureless embankments surrounded by black painted almost solid fencing, 17 and



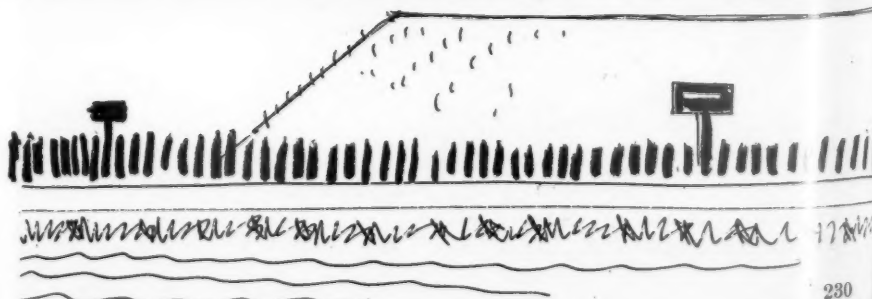
11



13, 14



15, 16



17

230

18, forming a caged walk and punctuated with threatening notice boards. Shabby concrete and wire fences abound, through which can be seen untidy dumps of building materials, 19, and rusting machinery.

18, 19

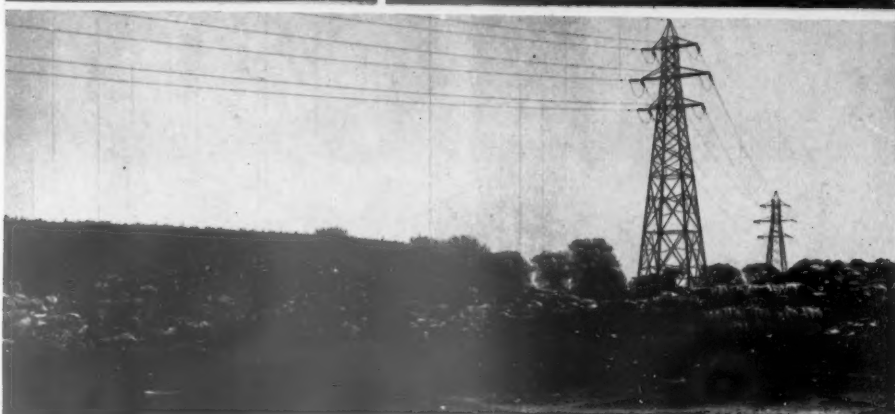


### foreground clutter

The massive shapes of industry require a foreground worthy of them, but all too often it is littered with a meaningless mess of waste products, junk and shanty building. The west bank of the Lea Canal provides an instance of thoughtless dumping perpetrated in what could be an attractive canalside landscape, and shows a disordered foreground of old motor tyres and bales of rags, 20.

A ragged scene of nondescript building, including air-raid shelters used as allotment sheds, forms the meanest of foregrounds for the power stations seen on the skyline, 21.

20



21

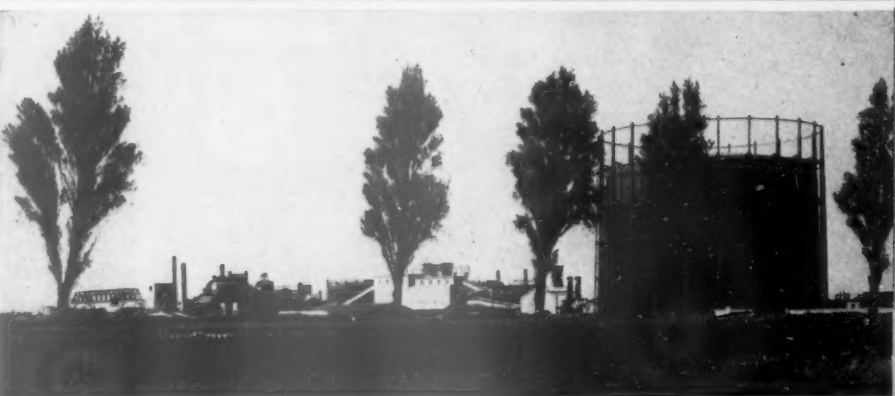


### WRONG ANSWERS ➡

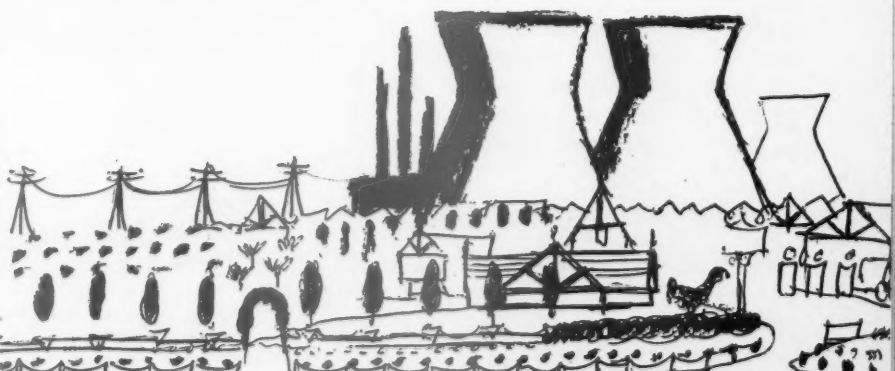
Industrial buildings should be accepted, with selection, as fine units of landscape and their dignity respected. A negative attitude is no use and half-hearted attempts at *screening* carried out with thin rows of unsuitable trees such as the Lombardy poplars in 22, is quite ineffective and merely makes the scene ridiculous. The trees do not hide the somewhat messy buildings to the left and their shape is in impudent contrast to the massive drum of the gasometer they 'screen.'

Equally unworthy is the tendency to sugar the pill of industry by small-scale planting and Ideal Home Villas, 23.

22



23



## SOLUTIONS



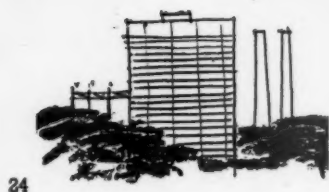
Undoubtedly there is great opportunity for the creation of a new and more worthy landscape for industry on the outskirts of our towns and cities and to achieve this there are three main elements at our disposal. *Massed trees*, 24, *Landform*, 25, and *Water and grass*, 26. Water and grass provide a simplified foreground to the mighty shapes of industry, whilst massed trees and landform will mask small scale building and clutter and unify the scene.

### trees

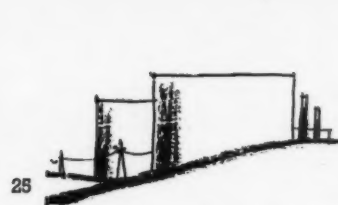
The provision of a good middle distance and horizon is essential to a satisfactory landscape and it is to complete these parts of the picture that trees are often required; not trees individually but used in broad mass so that they hide or unify the low-level untidiness and small-scale building immediately adjacent to industry whilst making no attempt to mask the main forms as at Brentford, 27, 2. Trees are a splendid unifying agent, for when massed their scale is in keeping with large buildings whilst individually they are in scale with man.

### landform

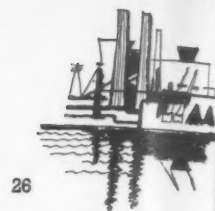
The amount of surplus spoil thrown up by modern excavation and the efficiency of modern earth-moving machinery make it now possible, as never before, to create new hills where they are required, a valuable asset as it is often desirable that a building should be isolated from neighbouring small-scale development and that a quiet massive background should be substituted for a worried skyline of small buildings. At Harlow, 28, 29, this has been attempted, though for full effect it will be necessary to wait until the trees are grown and clothe the bare hill shapes.



24



25



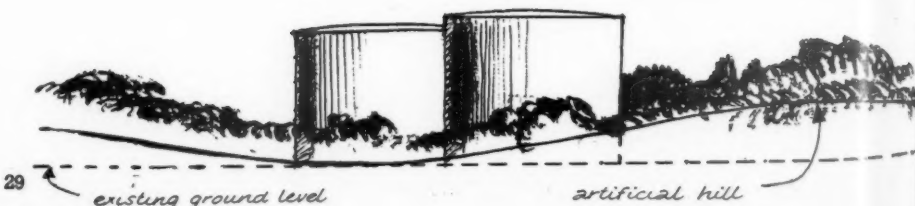
26



27



28



29

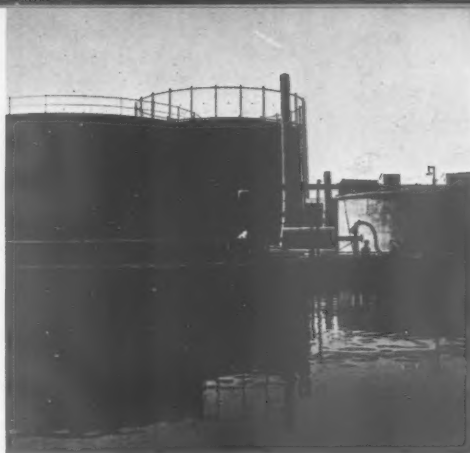


## water and grass

The effect of water is to simplify the foreground and nothing composes better with the scale of industry. When reflected in water even an untidy scene takes on a pictorial value. In 30 the shapes of gas production are reflected in the canal which runs beside it creating a satisfactory composition. Reservoirs which provide large sheets of water should always be considered when siting industry, for they will automatically give a simplified foreground and maintain the large scale provided that they are placed so that the water is seen. Worked out gravel pits flooded, 33, also have potential value for a similar reason in addition to their recreational possibilities for boating, fishing and bird-watching.

The use of large areas of well-kept grass has a similar effect to that of water in that they provide a clear horizontal plane as a base for the industrial building. Playing fields, 31, which are occupying more and more space on the city outskirts, can pro-

30, 31



32



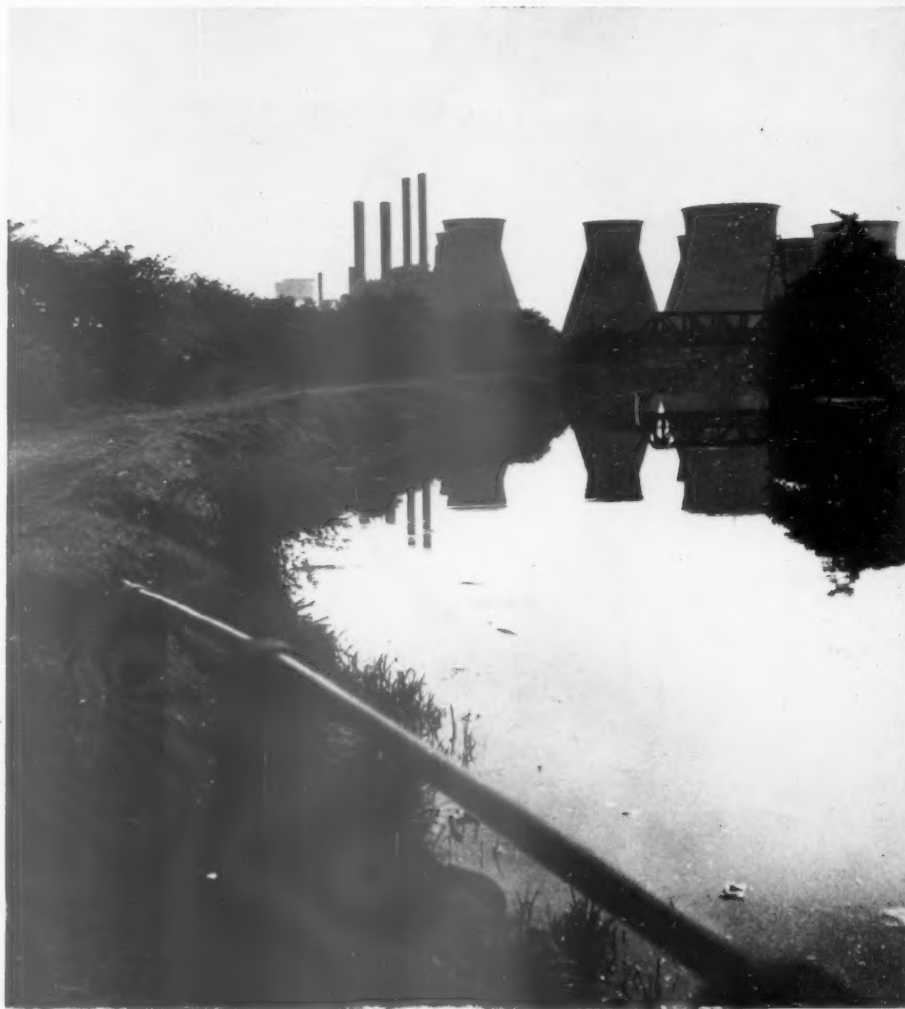
33

vide, together with racecourses, the large-scale areas that are required.

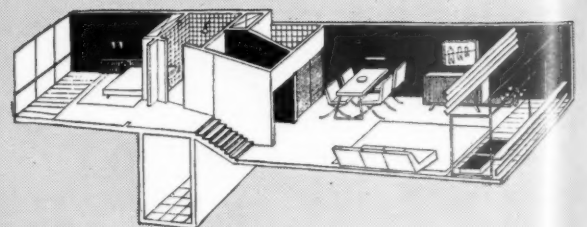
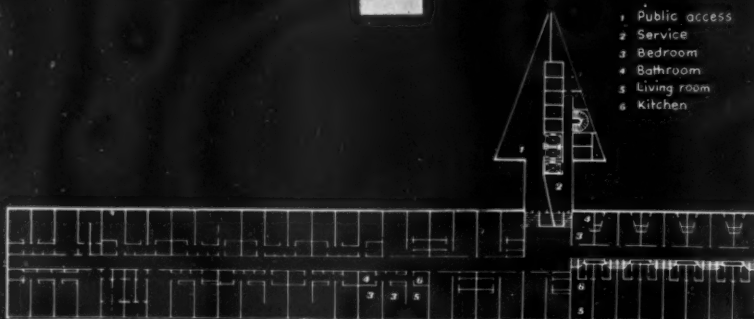
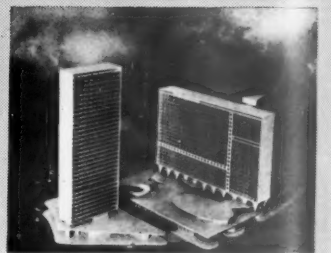
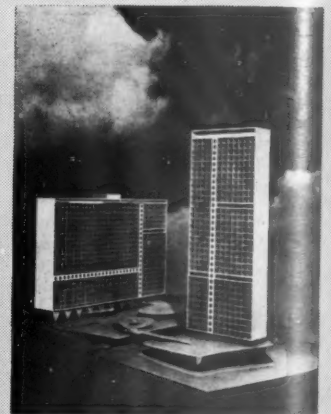
This scene might be improved by careful mass-planting to mask the unsatisfactory buildings on the left and provide the necessary link in scale which the composition requires, 32.

**Industrial landscape as it can be: Enfield Power Station reflected in the Lea Canal** ➔

34



The standards by which Brazilian architecture must be judged are not those to which we are accustomed in Europe, as will appear from the following pages. The scale of investment, for instance, is far greater, and much more adventurous, and the vast new Kubitchek project for Belo Horizonte by Oscar Niemeyer, though unique, is not untypical of the opportunities which face the Brazilian architect. Beneath the two major blocks, of 22 and 36 storeys respectively, the lower floors will house shops, a supermart, a highways terminal, an art museum, swimming and sports facilities, garage space and other communal services. Residential accommodation will be partly on hotel lines, and partly in semi-duplex apartments purchasable by the usual Brazilian 'condominium' procedure.



typical floor plan and sectional view of duplex flats

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# REPORT ON BRAZIL

From Europe our view of the new architecture of Brazil is almost as misty and romantic as was our forefathers' of Hy Brazil, that vast and legendary glass tower off the coast of Galway, inhabited by fabulous creatures. To the European architect few creatures could appear as fabulous as his Brazilian counterpart as he appears in the stories which filter back from Rio—of men with Cadillacs, supercharged hydroplanes, collections of modern art to make the galleries blush, bikini-clad receptionists and no visible assistants—nor could any glass towers of medieval imagination appear as improbable as skyscrapers which are reported to have been returned to the vertical by hydraulic jacks resting on refrigerated quicksands.

Our trouble is the lack of authoritative eye-witnesses, for Brazil is a boom-province of the Modern Movement which the Movement's masters have hardly visited since Le Corbusier lent his authority and support to the pioneer efforts of Costa and Warchavchik in the 'thirties; and, since the definitive reports of Goodwin and Kidder-Smith in *Brazil Builds*, we have had to rely on photographs and inflated newspaper stories which seem to bear no relation to one another, nor to the situation as Philip Goodwin left it.

Now, however, the magnet of Sao Paulo, the bonanza-city of contemporary architecture, and its *Bienal* exhibition have drawn the masters from Europe and North America. Their reports may vary—they may even make a point of disagreeing as Max Bill and Ernesto Rogers have done—they may sharpen a personal response, or expand into generalities, but they are the opinions of men whose inclinations are known, and for which we can make allowance in forming our own judgments. On the pages which follow are printed the reports of Gropius, Rogers, Bill, of Peter Craymer, a young British architect who recently spent a year working in Rio de Janeiro, and of Professor Ohye, a Japanese architect; and illustrations of buildings, such as Oscar Niemeyer's new house, which were the centre of discussion in Sao Paulo and elsewhere, and formed the solid material around which *Bienal* visitors crystallized their opinions.

## 1 PETER CRAYMER a young British architect who has worked in Brazil, reports on professional organization.

The great advance of the contemporary arts in Brazil is a matter of considerable pride to the Brazilians, a young nation with a strong pioneering tradition. Though their love of beauty is nurtured by their fine inheritance of Portuguese Colonial architecture, the great enthusiasm of the general public for new things in architecture and the arts is unique. That this enthusiasm is not merely a fiction of the official imagination is shown by the amount of space devoted to modern art by popular pictorial magazines, which have to sell to

a wide market, and by the extensive general interest in the Sao Paulo Bienal of modern art. The second of these, which included an international architecture section, was held last February, and was attended by numerous laymen as well as experts and artists, and there was keen interest in the discussions and criticisms which it aroused.

The press played an important part in this exchange of views, and has always done much to keep contemporary art before the public—particularly architec-

ture, a field in which journalistic standards are high—and it is pleasant to be able to pay here a tribute to an Englishwoman, Miss Claude Vincent,\* whose work for the *Tribuna da Imprensa* is widely read and appreciated by both the public and the profession. The cultural agency of the Brazilian government has also done much to stimulate interest in the country's modern architecture, both domestically and in the outside world, and when visiting celebrities come to Brazil they are always received with enthusiasm and civic honours, and invited to address both specialist and non-specialist audiences, the proceedings being always fully reported in the press.

However, this new awakening of Brazilian architecture is not immediately

\* Miss Vincent, who is also the Brazilian correspondent of the *ARCHITECTURAL REVIEW*, was responsible for pages 241-250 of the *Report on Brazil*.



apparent to the casual visitor, and one may live in a city like Rio for many months without ceasing to receive a shock on coming upon one of its masterpieces of good contemporary building, concealed among the preponderance of American-style skyscrapers, gems (sic) of Art Nouveau, and buildings in the revived Colonial manner. Even in the exclusive mountain resort of Petropolis, summer residence of many Cariocas (citizens of Rio), one still has to search to find a house by Sergio Bernardes, though this state of affairs may not persist, for this young architect's popularity is increasing and he is already established among the leaders of the profession.

The acceptance of the new style followed very shortly after the completion of the Ministry of Education, after a very brief transitional period, and modern architecture is now fully established and very much the accepted thing. Much credit for this must go to the government which had the courage to commission young, contemporary-minded architects to work on the Ministry of Education project, and the success of this design has led to the projection of other Ministerial buildings, such as the new Foreign Office, in the same manner. Local government has followed suit, as the Pedregulho scheme bears witness, and the architect chiefly responsible for this development, Affonso Reidy, was for some years Director of Town Planning to the city of Rio. Though he has recently resigned this post, and returned to private practice, his completed schemes and projects still in hand are models of civic enterprise. Other distinguished architects holding public appointments are Aldous Toledo, Carlos Ferreira and Jorge Moreira, who carried off two major awards in this year's Sao Paulo Bienal.

Older ideas are dying out, being scrapped and replaced by the concepts of the new generation, even in the vigorous and disorderly field of speculative building, for the speculative builders are becoming increasingly aware (a) that a trained designer can obtain better economic performance from a given area of site, and (b) that with improving public standards of taste and living, something better is expected than the unplanned and nondescript structures of the past. This new movement of ideas is still dominated by the prominent few whose work is so often published and illustrated in the journals of the world. Most of these designers are under fifty years of age, and yet a distinguished new generation of younger men has already formed behind them—men like Helio Duarte, Paulo Guimaraes, Elvin McKay Dubufas, Roberto Martins de Mello, whose work will certainly come to public notice in the near future, and who have offices of their own or in partnership.

The quality of the architectural education which has produced these men is difficult to assess. Studies for the architectural degree at any one of the universities take five years, degrees must be registered with the Ministry of Education, and no one without a duly registered degree may call himself an architect. A large part of the five years of study is spent in an architect's office, and a fair proportion of the more

prominent architects now lecture at Rio or one of the other universities. Both the nature of apprenticeship and the availability of teachers are affected by the unique Brazilian situation where offices are very small. The architect is not the administrative head of a complicated team, but more like an artist working with a select band of personal assistants. The personality of the employer inspires his staff by direct contact; he is always to be found at the drawing board in his office, which is usually the only room, with a small area partitioned off by a low screen for his secretary. This leads to informality, and christian-name relationships between all staff, but this enhances, rather than diminishes, the regard of the group for their leader. Clients, friends and contractors meet around the drawing board in this informal atmosphere, and all the parties concerned in the project come to know one another intimately. The contractor must be kept very closely informed, because he and the architect must work without the assistance of quantity surveyors or of specifications as we know them in England. Specifications would present some difficulties in a country where the manufacture of fittings and components is in its infancy, where the range of materials is limited, their performance uncertain, and standard catalogued sections almost unknown. A natural corollary to this situation is the general tendency of established architects to farm out working drawings and full-size details to young and freshly qualified architects who are often glad to supplement the uncertain income of a newly established private practice—one eminent architect has no staff at all beside his secretary.

The smallness of the offices, and the undeveloped state of the building materials industry, encourage the architect not to standardize except on quite small details such as doors, sills and fixings to framework, and his progress as a designer is apt to have the variability of a sculptor's or painter's development. But the obverse of this freedom is the unreliability of materials mentioned above. This will probably disappear as industrialization proceeds, but in the meantime a number of excellent buildings have been spoiled by the failure of facing materials—or by the failure of owners, including public authorities, to keep up repairs and maintenance after they

have taken over the building. This is almost the only major point on which one can criticize the new architecture of Brazil, the more so since the *Patrimonia* takes such good care of historical buildings—much credit must be given to Lucio Costa in Rio, and to Dr. Vallordis in Salvador, for the excellent state of preservation of surviving colonial buildings.

On the other hand, the close integration of architecture with the other arts is undoubtedly a matter for congratulation—to client as well as architect for considering that works of statuary, mural decoration and garden-layout are essential parts of the building. In private as well as public work, wall decoration in the form of painting, mosaic or tiling has done much to draw attention to modern art. The greatest practitioner in this field is, of course, Roberto Burle-Marx, whose gardens and mosaics at the Sao Paulo fourth centenary exhibition attracted widespread attention and praise. His work, like that of his collaborator at Sao Paulo, Oscar Niemeyer, has had considerable influence on other arts, and notably architecture itself. Similarly, there is hardly any part of Brazil which does not possess some work by Niemeyer—even if it is not as well provided as the State of Minas Gerais—to act as a stimulant and example to other designers. His pioneering activities, together with those of Lucio Costa, will be cherished by future generations of architects, and his continuing vitality, his sense of the graces of architecture, his feeling for form and proportion, and his continual demonstration that practical functions do not stand in the way of beautiful architectural solutions are a continuous inspiration to the rest of the profession.

For Brazilians have a conception of architecture in which the structural skeleton plays a far more important and fundamental role in the appearance of the building than it does in Europe, and for this reason the engineer is bound to be enthusiastically involved in research into new structures and new formal solutions, and the barrier between the architectural and engineering professions—unfortunately so common over here—is not to be found in Brazil, and this achievement is not least among the architectural triumphs of Niemeyer, Reidy, Bernardes and their compatriots.

## 2 WALTER GROPIUS who with

Mrs. Gropius visited Peru and Brazil, where he was awarded a prize.

The following views have been compiled from communications from Professor and Mrs. Gropius, the latter speaking first:

In contrast to the more recent attitude in the States it was heartening to see with what generosity and sincerity they (the Brazilians) acknowledged their indebtedness to the stimulation they received from abroad. Right now every young architect

is in the position to show you . . . seven skyscrapers he built last year, and they might easily have forgotten . . .

In Rio we were taken by Niemeyer to his new house which he has built on a slope in a gorge between two mountains with a fantastic view on to the sea. The air was still full of Max Bill's accusations which have made the rounds in South America.

We did not think them quite justified, and Niemeyer can anyhow only be understood if one knows Rio. There one can do the craziest things unpunished. Everything flourishes and grows, everybody seems to live on air and nobody ever presents the account. At the moment Niemeyer is making an enormous plan for Belo Horizonte; he builds for rich people fantastic houses and is as Walter calls him the Peacock of Brazil (Paradiesvogel). One can criticize the construction; but mistakes are not very deadly here, as they would be in our climate, and it is not justifiable to measure them with a Swiss yardstick. We were most impressed by Reidy's Pedregulho about which also Bill was most enthusiastic. A new housing estate for State employees built with government support; it is not quite ready yet, but already quite delightful and most successful from an aesthetic, technical and social point of view. Flats, schools, stadium, library, health centre, swimming pool, market, nursery and kindergarten, a model for the world. But in Rio nature is so powerful that it remains by far the greatest impression. The zoo, the botanical garden where Costa took us, the jungle directly behind the city, thank goodness protected against destruction. The surf at the foot of the Copacabana Hotel—unforgettable. For the rest the Brazilians are about to destroy their country with the newest method and the oldest ruthlessness in the same measure as the American pioneers used to exploit the North American continent. They have learnt nothing; they burn wholesale valuable timber woods to heat their engines and create pasture . . .

Brazil is a wild country of a chaotic, almost explosive, development. It seems to have a great future since its riches have hardly been tapped. They still lack the transport ways, railways and highways to make world business with their valuable lumber in the virgin forests and their mining products. The development over the last ten years is unbelievably large. The cities, particularly Sao Paulo but also Rio, have grown out of the public amenities, water and electricity. These public services cannot keep pace with the rapid growth of the cities, and—what is more serious—there is no well-considered planning to keep this wild growth in order. Sao Paulo, now 2,500,000 inhabitants but only 170,000 cars, is choked during the rush hours because there are no circumferential roads, and every car passes through the centre. Skyscrapers are popping up like mushrooms. I have never seen anything like it anywhere; so the urbanistic problem is in the foreground, but there are very few signs of putting in planning commissions with the power of decision. Everything is done in a haphazard way by doubtful politicians.

As Brazil does not have to defend any indigenous old-style architecture, all the buildings are practically modern. But, of course, only some of them are well designed because the architects are not given sufficient time to do their working drawings well. All those people I have been in touch

with are most interested in modern architecture, as well as the whole press, which was evident from the overwhelming amount of publicity I got myself after receiving the Sao Paulo prize from the hands of President Vargas. I believe that everybody takes for granted that buildings have to be in the contemporary line.

Of the former French Beaux Arts type of buildings, one does not see many any more except some in the expensive residential districts. Otherwise, the amount of well designed, modern residences is large.

And there is no doubt that in one type of building, Brazil is tops; namely, the development of 'co-ownership' apartment blocks all over Sao Paulo and Rio.

As most visible elements of their architecture, there are two features, the brise-soleil and protective devices against thievery, designed in a very pleasant and varying way of grilles partly taking two functions simultaneously; sun and burglar protection.

I did not find much deterioration of modern buildings. On the contrary they are well built, using much stone and recently whole façades are incrustated with small coloured tiles which, of course, stand up for good since they do not suffer from frost. Very interesting methods of small rectangular granite pieces as surface façade materials are being used, also very sturdy and permanent construction. The

Education Ministry in Rio, which I consider a landmark of modern architecture, is well constructed, but the management seems to be bad as it is too dirty and has a few leaks which could easily be repaired.

Outstanding is the Pedregulho development by Reidy; that group of housing, including school, gym, health centre, market and swimming pool, is a model both from the aesthetic as well as from the social point of view, not only for Brazil but for the world. Reidy seems to me a really outstanding architect, and is now working together with Mme. Carmen Portinho, who is the Housing Director of Rio.

Niemeyer's buildings are always interesting and fresh in conception, but he seems to be little interested in details and so the executed buildings sometimes lack high quality.

We also saw many of the works of Roberto Burle-Marx which, though one cannot understand them in drawings, in reality are most pleasant and done with a thorough understanding of plants and their character.

All in all, I think one can really stress the point that the Brazilians have developed a modern architectural attitude of their own and that they have a great many genuinely gifted architects who carry the ball. I do not believe that this is just a passing fashion but a vigorous movement.

### 3 HIROSHI OHYE a Japanese architect who visited the Bienal, recorded these impressions for the ARCHITECTURAL REVIEW.

Professor Ohye of Hosei University, Japan, where he heads the architecture section, as well as conducting a private practice, was another visitor to the Bienal and his views on Brazilian architecture are of particular interest since they come from one whose introduction and relation to the Modern Movement are bound to be completely different to our own. Describing his reactions to the buildings in Sao Paulo he said:

They are too 'fantastic' for a person of my taste. They seem to be designed chiefly for effect and to look well in photographic reproduction—technical matters, quality of equipment, and even rational planning seem to be overlooked in the effort to make a show, and services such as water, electricity and air-conditioning often suffer from indifferent workmanship.

In spite of this desire for show, it is not uncommon to face a building completely in 'one particular material, such as tile, mosaic or plaster, and this leads to a certain monotony. Concrete construction has qualities and a beauty of its own—why not leave it exposed on occasions? However, most of the buildings in Sao Paulo have weathered very well, in spite of everything—but the same cannot be said of the Ministry of Education in Rio, where poor upkeep and bad plastering

have almost wrecked the architectural effect. At the moment the building suffers by contrast with the excellent gardens—but, of course, Roberto Burle-Marx is one of the greatest figures in Brazilian art today.

As for the architects themselves, there can be no doubt as to the greatness of Rino Levi, Affonso Reidy and Oscar Niemeyer—though there is truth in the suggestion that the latter is not so much an architect as a sculptor who shapes buildings plastically. Among the younger architects I was particularly impressed by Ernesto Roberto Carvalho Mange, who is building a technical school for the Senai organization. This interesting project will be financed partly by public money, and partly by the sale of work done by the students, who are mostly young factory hands of fifteen to twenty.

But the great feature of Brazilian architecture is undoubtedly its exuberance. Conditions in Brazil make things easy for the architect and do not encourage restraint, or close study of building problems, so that one feels that there is too much freedom of the imagination. But for this reason the architects of Brazil have been able to contribute to the Modern Movement a wonderful quality of imaginative fantasy.

\* This is the end of Mrs. Gropius' letter; the remainder of the article is contributed by Walter Gropius.



# 4 MAX BILL

the Swiss designer, who had visited Brazil before the Bienal. His criticism is taken from a lecture given there.

I intend to speak very frankly, but by no means in the guise of a destructive critic, least of all in reference to the striking achievements of some Brazilian architects. Among these I want to name first of all the famous Pedregulho development in Rio, a work as completely successful from the standpoint of town planning as it is architecturally and socially. My remarks should be read as coming from one who is a sincere friend and admirer of Brazil.

When I arrived the press reporters at once attacked me with questions which, considering I had only just landed, were none too easy to answer. The standard ones were 'What do you think of Brazilian architecture? What do you think of Brazilian art?' and actually I knew Brazilian art and architecture only from reproductions, such as are always apt to give one a rather distorted impression.

Perhaps, indeed, it is rash of me to speak openly today of the impressions I have received of the art of your country, especially so as regards architecture. When I was asked to speak here I thought at first it might be useful to talk of art and of architecture as art. A talk of that kind might have fallen kindly and pleasantly enough on your ears; but after what I have now seen of Brazil I might have been led to tell you things that could have caused many misunderstandings. Had I spoken, as I might well have done in Europe, of artistic questions and of beauty from the point of view of defending art against pure rationalism, I should have seemed here to be taking up an attitude of the most terrible academic unreality.

Rather, then, I must speak from another standpoint, addressing myself first and foremost to the students who are the future architects of Brazil: a country in which the sheer volume of building exceeds all bounds of belief, one in which the need to build remains ever a primary need, one in which it is yourselves who have to fashion the look of the cities of tomorrow.

What, then, had I best tell you? Asking myself this, I decided that for once, eschewing pretty platitudes, I would let you hear the truth about the calling of architect and the truth about Brazilian architecture. What I shall say, then, will be a criticism; and since I have been officially invited here and I want to tell you things which may be useful for the future of your country I shall speak of the things I have noticed here. In two days' time I shall be off. Perhaps, who knows, my plane will crash in the Andes. So I will be frank and not inhibited by formalities. I do not want to shy off from telling you my opinion, which is this: architecture in your country stands in danger of falling into a parlous state of anti-social academicism.

So I intend to speak of architecture as a social art; an art which cannot simply be set aside, one of these days when it no longer seems to meet the case, because 'style' has changed—because wiping out values which run into millions or billions is not as easy as just putting away a few canvases or pieces of sculpture deemed bad or mediocre.

Let us start, then, by singling out those elements in Brazilian architecture which call for remark. I have found four such elements, important because they embody what I shall refer to as 'the academic spirit modernized.' They stand roughly on a par with those columns of Greek temples which have been transformed first into renaissance and then into so-called 'classic' columns; by which I mean that they have become mere formulae observed without thought or reason. Here is the first of them:

**Free Form; Organic Form or Free-planning.** Freedom of form was born with the new style, but it owes its introduction into the art of today primarily to Kandinsky in his pictures of round about 1910. Now it finds its typical expression in the work of Hans Arp who, in his very harmonious sculptures and reliefs, has been following out this principle for some decades. In Europe one comes across applications of this conception of form every day in decoration, in textiles, in advertising and in terrible exhibition stands. It is Le Corbusier to whom is due the credit for introducing Free form in garden planning and also in architecture, the latter by making curved walls and roof gardens which were organic in form. Lastly, it is also he, ever the inventor, who introduced freedom of form into town planning, by way of his plan for the city of Algiers in North Africa. Not that he was the first to have had the idea: for as early as the eighteenth century the town of Bath in England had been planned somewhat on these lines.

Organic form can, indeed, be of value in the pursuit of a function, as for instance the function of making a building more useful. But that is the exception. Today most applications of Free-form shapes are purely decorative. As such they have nothing to do with serious architecture.

The second of the elements here in question is the *all-glass wall*, whereof this is the history:

In 1910 Walter Gropius built a factory, in 1914 an office building and in 1926 the Bauhaus, each of which was entirely faced with glass. These façades covered all over with glass have become rather fashionable. Above all, Le Corbusier too began to make buildings with these glass façades; but his work and the fine creations of Mies van der Rohe have shown that the thing is not really practicable in the absence of air conditioning and very careful technical

services. Thus in order to protect glass walls where burning sun and glaring light made them intolerable Le Corbusier invented yet a third element:

**Brise-soleils.** Today the sunbreaker is accepted as an indispensable accompaniment to the mania for glass walls. No longer is any attempt made to meet varying conditions by looking for new solutions. Here in Sao Paulo itself there are examples of the application of brise soleils on all four sides of a building.

The fourth element in this so-called modern architecture is the *piloti*. In the last few years this has changed a little in accordance with 'the latest Paris fashion' as set in the workrooms of Le Corbusier.\* Initially the pilotis were straight, but now they are beginning to assume very baroque forms. At first glance they may strike one as an ingenious mode of construction, but it is one which has now become purely decorative. Let me give an example. In a street here in Sao Paulo I have seen under construction a building in which piloti construction is carried to extremes one would have supposed impossible. There I saw some shocking things, modern architecture sunk to the depths, a riot of anti-social waste, lacking any sense of responsibility towards either the business occupant or his customers. Having seen only the first two storeys I do not know if glass walls and brise-soleils are to appear on this building, too. Anyway, what it illustrates to me is the utmost possible abuse of freedom of form and most fantastic possible employment of pilotis. Here is utter anarchy in building, jungle growth in the worst sense.

I have purposely chosen this example of an uncompleted building as it seems expressly made for the sophisticated to examine, and you can all go and look at it. It is not a theoretical case but a piece of reality. And its lesson is that unless you ponder very carefully over the duties of the architect in the service of man and society you may yourselves fall into errors of like kind, for it is a fact that such architecture as this may seem at first sight to be revolutionary and may claim on that account to be a work of art.

\* Before I came to Brazil I thought, like many architects of the European vanguard, that Le Corbusier's solution of raising houses on piles and dispensing with internal courts was the ideal one for adoption in the cities of the future. An entirely successful example of this has always been recognized as existing in the famous Ministry of Education and Public Health in Rio de Janeiro, for which Le Corbusier collaborated as consulting architect, the conception of this being typical of the ideas he teaches. Yet even before I came to Brazil I had felt some attendant doubts about this idea in town planning which I, too, had been propagating with some enthusiasm. I have noticed that the courts which this conception of Le Corbusier is to displace have certain functions to perform which would be lost in making the change. There is the question of concentrating the pedestrian traffic, and the quietness of the old internal courts, to be weighed. Furthermore, there arise very serious problems of ventilation and climatisation, also of lighting and of protection from the sun. I have studied this problem, which may not be a very important one in northern countries such as Switzerland, Germany and Sweden, but becomes decidedly so in Italy, Spain and the South of France, where I have seen that the internal court has a role to fill which cannot be filled by an alternative solution. We ought, therefore, to look for new ways, according to the conditions under which we live, for obtaining the advantages of courts whilst getting rid of their defects. That would be a far more organic achievement than replacing them by buildings in the form of 'boxes on stilts.' This observation implies incidentally a criticism of the famous Ministry of Education in Rio de Janeiro, which building I cannot regard as having been conceived in proper organic relation to the conditions of the country. That is not to say I have not every respect for the responsible architects, but I feel compelled to state my view that they have fallen into error in following a doctrine not applicable in their country without notable corrections. I make no claim to knowing what the right answer is myself, but it is part of an architect's job to work out the best answers to suit his own country. Failing this, one cannot but speak of a dangerously academic trend.



Immediately you enter on the building site you are struck by an awesome muddle of constructional systems. Thick pilotis, thin pilotis, pilotis of whimsical shapes lacking any structural rhyme or reason, disposed all over the place; also walls entirely of reinforced concrete pointlessly confused with the columns, cutting up and destroying all form and purpose. It is the most gigantic disorder I have ever seen on a job. One is baffled to account for such barbarism as this exemplifies being able to break out in a country where there is a CIAM group, a country in which international congresses on modern architecture are held, where a journal like *Habitat* is published and where there is a biennial exhibition of architecture. For such works are born of a spirit devoid of all decency and of all responsibility towards human needs. It is the spirit of decorativeness, something diametrically opposed to the spirit which animates architecture which is the art of building, the social art above all others.

I tremble to think that even among you here there may be those whom this spirit attracts. And since, as I have said, it is my aim to shield you from such mistakes, I shall explain in a few words wherein the vocation of architect consists. If even one or two of you understand what I am about to say I shall be happy in the knowledge that those one or two will be enlisted as fighters for an architecture truly modern, wholesome and serviceable to mankind.

The role of the architect in the society of today is to make human surroundings habitable and harmonious. It is the architect who co-ordinates the manifold needs and activities of man. It is he who unifies the form of widely differing functions: shelter, work, recreation. If it is our wish that humanity should live otherwise than like ants whose ant-hill has been kicked over it is we, the architects, who have to provide new answers to its demands.

But what is this new structural form we are seeking? Is it in fact a form characterized by freedom of planning, by pilotis, brise-soleils and walls of glass? Has it to be as photogenic and spectacular as all that? I do not believe it. Architecture is often destined to remain standing for rather longer than a few years. It is something which outlives the generations. You are able to call to mind architectural excesses of the past and you laugh when you look for instance at such an example as the Prefecture in Sao Paulo. But why, actually, do buildings like this strike one as funny, whereas one is not moved to laughter on catching sight of some simple building such as the pioneers in your country used to put up? Precisely because in the first mentioned the architect and his client were unable to withstand the temptation of making a spectacular building, whereas the pioneer had made the building which best served his needs.

You may, perhaps, think my point of view too narrow, and that architecture which succeeds in being functional even in the highest sense of that word may still be over dry. You argue, maybe, that architecture, too, is an art, an art moved by the urge to self expression and the urge to infuse buildings with the thought of artists.

But such is not the function of architecture. The architect who so proceeds makes himself ridiculous. This point of view is one which springs from the mistake that the art of building must be something other than the art of playing a certain useful role in society; also from the mistake of supposing that an art, and particularly the plastic arts, ought to consist of what is so nicely designated by the phrase 'self expression'.

That is neither art nor architecture. Art consists in making an idea as clear and objective as it can be made, through a choice of means as adequate as can be chosen. A work of art must take a form of such perfection, must be an expression of such harmony, that its author is incapable of either changing or adding a single stroke.

In the case of architecture the result must, furthermore, be as functional as is possible to make it. The beauty of architecture reaches perfection when all its functions, its mode of construction, its materials and its planning are in perfect harmony. Good architecture is that in which every element plays its appointed part and no element is superfluous. To achieve such architecture the architect must be a fine artist. He must be an artist who has no need for whimsicalities in order to draw attention; one who, above all, is conscious of a responsibility toward the present and the future. Such an archi-

tect, whenever he does any piece of work, makes a plan, chooses a detail, or decides the smallest trifle in regard to his building will always ask himself the question: 'shall I, if I see this again in twenty years time, be irked that I did it?' Unceasingly he will visualize how men are going to act and behave within his building. And always he will be very severe towards himself.

He will have no thought of how he may cause a sensation among his colleagues or the public, or of how fine a publication his creation will make. No: his guiding motive will be, in all modesty, the service of mankind.

Ultimately I feel that there are enough forces of originality here in Brazil to keep architecture free from the bonds of academic principles, those superfluous principles which in your country are not valid. I am a believer in your own power to create a truly modern architecture conformable to your splendid natural conditions and your economic capacities.

My final word is that you should ever remind yourselves of the true principles underlying modern architecture:

Firstly, an architect must above all else be modest and clear. Architecture becomes an art when all its elements—function, construction, form—are in perfect harmony.

Secondly, architecture is a social art. It must serve man.



## ERNESTO ROGERS

the editor

of *Casabella*, wrote an article for it after a visit to Brazil, of which this is an extract.

I hope you will not think me too 'literary' or vague if I talk in this way in the pages of the magazine I am directly responsible for; I only ask you to take the trouble to translate my words into the terminology of architecture and to realize their bearing on our particular field. That done we can immediately pass on to our subject, for these notes were occasioned by a recent trip to Brazil.

The architecture in that country has frequently been the object of exaggerated, arbitrary, and diametrically opposed judgments; even the most knowledgeable observers have failed to be discriminating in their reactions to Brazil's sudden wealth of buildings and a certain overbearing novelty in their appearance.

Siegfried Giedion thought he saw evidence of a new kind of liberty, but failed to perceive when it degenerated into licence and caprice. This deference in the judgment of an otherwise penetrating Swiss critic might be attributed, in this case, to a reaction against a feeling of 'claustrophobia' which the somewhat too conservative architecture of his own country might have aroused in him. But another Swiss, Max Bill, an artist of great severity of style who has always tried to identify his works with the objective laws of mathematics and geometry, was unable to

appreciate the meaning of an art so different from his own, even in those cases where that foreign art was perfectly self-sufficient and coherent and produced works of undoubted value.

But looking at Brazilian architecture from a particular angle (the Swiss, for example) is, in any case, to fall into the error of abstraction, which leads fatally to the extreme polarities of formalist criticism.

T. S. Eliot, in his short essay *Tradition and the Individual Talent*, asks both artists and critics to broaden the terms of the historic sense, and puts them on guard against inherited cultural limitations which influence the quality of a judgment: 'Every nation has not only its own creative, but its own critical turn of mind; and is even more oblivious of the shortcomings and limitations of its critical habits than of those of its creative genius.'

Brazilian women make a great show of their bracelets and other innumerable trinkets; they would be striking even if you met them in Engadina; but against that background of Alpine glaciers you might be inclined to take exception to their ostentatiousness; yet if you saw them at Copacabana you would have to admit that they are in perfect keeping with their background, just as the seductive perfume of the flowers you find on the sinuous slopes of the

mountains surrounding Rio de Janeiro (like those women, over-perfumed, over-coloured, highly sensual). The same might be said for the best work of Oscar Niemeyer; I cannot overlook the many and often unforgivable faults in the work of this capricious artist, nor can I sympathize with this tendency to prefer works of brilliant fancy (designed after virtuoso sketches) to sound technical solutions to architectural problems (including social problems, which are almost completely neglected in his work): I do not object so much to the capriciousness of his themes as to the impossibility of fitting them into any organic system.

If we set aside our prejudices and consider Niemeyer in the context of his time and place another more objective evaluation becomes possible, and while his faults may remain, his merits can be appreciated. The essential value of his work lies in having understood a number of the typical values of his country and these may be deduced by analogy from its physiography; the circle of cause and effect closes in the expression of a style where the particular content tends towards its unequivocal material identification.

While criticism must necessarily be severe and label as formalistic works in which appearance is not an organic product of internal necessity, this same label must be used for criticism which under the spell of *a priori* opinions, is incapable of grasping the meaning of works out of the range of its highly subjective taste. If, on the other hand, we call into question the formalism in Niemeyer's less successful efforts and the oversights in his successes, we must, on the other hand, accept the validity of his personal poetry whenever it springs from a genuine inspiration and approaches the unity of an organic work.

We must also avoid the formalistic error of evaluating with the measuring stick of our own poetic preferences a work which is the product of a different poetic world. Along with this error we may mention that of judging an artist by his followers: if Niemeyer's many Brazilian imitators often produce architectural monstrosities, as do many of our own charlatans, this is no reason for calling the model himself into account, making him responsible for the excesses of his followers, as some art-texts do, attributing to Michelangelo the third-rate work of his imitators.

The house an architect builds for himself may be considered in general a manifesta-

tion of his aspirations, a kind of witness, a confession of his sins, a holograph in which one can not only examine the visible text but also graphologically trace the secret motives of the text and the deep-running roots of the poet's inspiration. Typical of this is Oscar Niemeyer's latest home, perched on one of those undulating hills overlooking the many gulfs vigorously twining around Rio de Janeiro.\*

When I visited this house I was with Lucio Costa, who after having been considered for many years as the Allah of Brazilian architects, decided (in a gesture of unheard-of and, perhaps, excessive modesty) to become Oscar's Mohammed, his most devout and generous prophet.

I doubt that I shall ever forget that scene: the sun was just dipping below the horizon, leaving us in a dark sea of orange, violet, green and indigo. The house repeated the themes of that orgiastic countryside (incense and the hum of insects): a vast rhapsody beginning in the roof vibrated down the walls and their niches to finish in the pool, where the water, instead of being neatly dammed up, freely spread along the rocks of a kind of forest pool. The main part of the house is outward in character, not only because the living room space continues uninterrupted by walls or other partitions out into the open, but also because it romantically tends to identify itself with nature and become a part of it: quite the contrary of a house of Pompeii or of the *patios* which lock up the secrets of the various houses of the Casbah, each sufficient unto itself, closed off in its own private universe. Personally I feel more at ease in a mediterranean architectural setting, but does that give me the right to snub or critically condemn the artistic expression of a poet who for reasons of different cultural upbringing and different geographical setting rightly prefers to go his own way? I could, of course, mention the obvious faults of this house: the incoherent relationship between the ground floor and the badly-ventilated bedroom-mezzanine, etc.; but although such considerations must be weighed in a definitive judgment of this house, they must not determine the way we go about forming our judgment.

Alvar Aalto, who visited the villa at that time, was more or less in agreement with these criticisms, but I am sure he would not be so rash as to expect Niemeyer's tropical flower to flourish in the frigid soil

of Finland. Nor should we think that Brazilian architecture is monotonous; far from trying to rigidly classify types, a truly catholic criticism should try to grasp the essential character of any given culture amid all the apparent contradictions and natural differentiations of individual inspiration.

It is interesting to note that Oscar Niemeyer, a rather temperamental and instinctive artist, represents a current trying to graft modern architecture (particularly Le Corbusier's) on to the trunk of his country's highly individual geography, while Lucio Costa, a little older, more thoughtful and studious, foresees the grafting of modern architecture (again Le Corbusier's) on to the humane tradition initiated in Brazil in the seventeenth century to adapt Portuguese architecture to local needs.

I have had occasion to admire the little town of Ouro Preto in the province of Minas Gerais. In this town, a beautiful example of colonial architecture, we can see Costa's original models, but it is not too difficult to spy even more remote sources: Arabian influence transmitted through Iberian culture; however, all such themes of an introvert poetry (the courtyards, the windows and the terraces veiled by the 'celosias,' the private gardens) strike one as rather pathetic against the impulsiveness of the local spirit with its powerful colours, its colonial blue, blood red, and contrasting black and white.

This is a rich and comparatively unexplored field in which Brazilian architecture could explore to the full the possibilities of its original thematic material. Meanwhile, we consider highly indicative of a growing architectural maturity the series of building going up in Pedregulho under Affonso Reidy's direction. This work seems to suggest a happy fusion of the natural and cultivated traditions of Brazil; one can see how each tradition, though sufficient unto itself, is capable of contributing to the solution of other specific problems. I have tried to give in outline some of the general considerations I have arrived at as a result of a specific experience; assuming that the above experience was suggestive enough to warrant writing about, I have tried to carry my evaluations of that experience beyond my personal preferences in architecture (obviously different from Brazilian architecture and often violently in contrast with it) towards a greater understanding of other people's work.

\* See frontispiece page 214 and also pp. 248-9.



# REPORT ON BRAZIL

## IV CENTENARY OF SAO PAULO

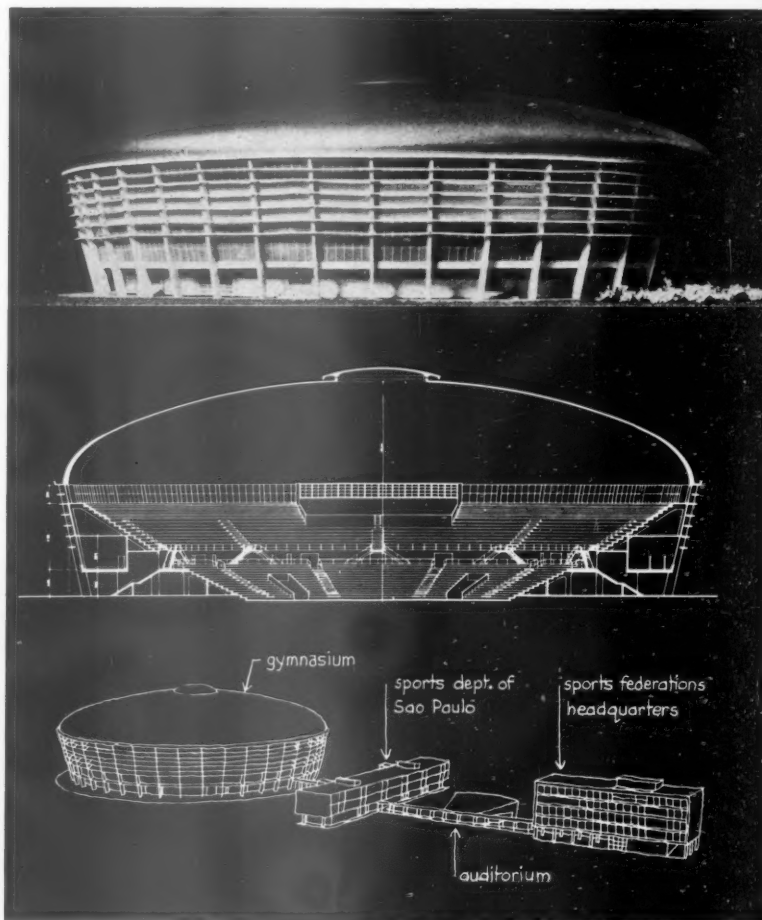
### Sports centre: architect, Icaro de Castro Mello

One of the permanent installations of Sao Paulo's IVth centenary commemoration exhibition, the sports gymnasium, will provide the city with facilities which have been wanting for some time. Under the reinforced concrete dome, which is over 100 feet high and over 300 in diameter, there will be accommodation for between 20,000 and 30,000 spectators on 26 tiers of seats, while beneath the seating there will be space for dressing rooms, medical facilities, and all the usual services. Press, radio and television accommodation is in two banks of booths high up under the edge of the dome. Ancillary buildings provide for three auditoria, and the headquarters of twenty-five sporting organizations, while lodgings for 150 athletes have been erected in a separate scheme at Agua Branca.

1, the gymnasium under construction. 2, model and section of the gymnasium and perspective of the completed group.



1

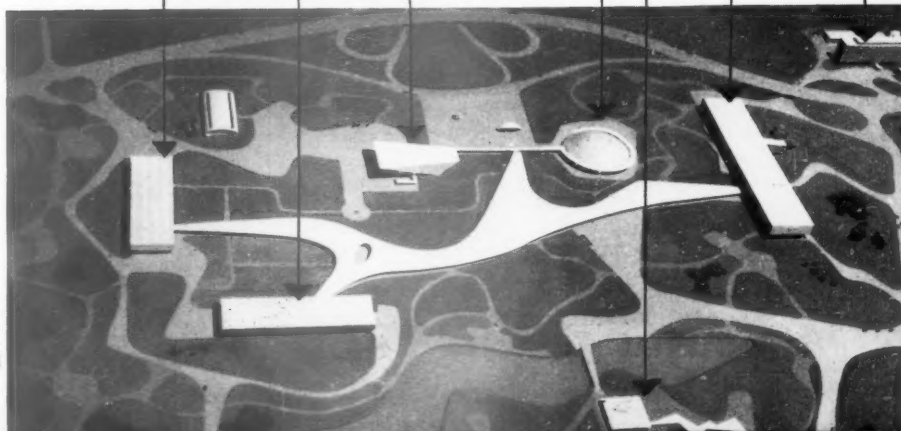


2

### Exhibition: architect, Oscar Niemeyer

The structures which house the IVth centenary exhibition itself are arranged in a loose group in the Ibirapuera park, but are united by the covered walk which gives shaded access to each part of the layout, as well as sheltering shops and other minor elements of the exhibition. The auditorium and planetarium have been considered together as a group, the angular shape of the former being balanced against the low dome of the latter, while another sculptural element is provided by the symbolic spiral surface of the vertical feature which stands near them. This group has been a constant feature, more or less, in all the variations of the project which appeared before its finalization, but the large pavilions—Commerce, the Nations, and the State of Sao

STATE PAVILION  
RESTAURANT  
PLANETARIUM  
AUDITORIUM  
PAVILION OF THE NATIONS  
AGRICULTURE PAVILION  
PAVILION OF INDUSTRY

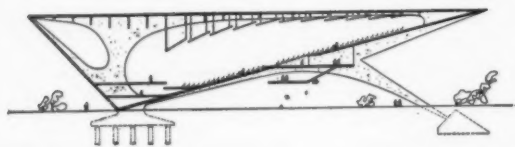


3

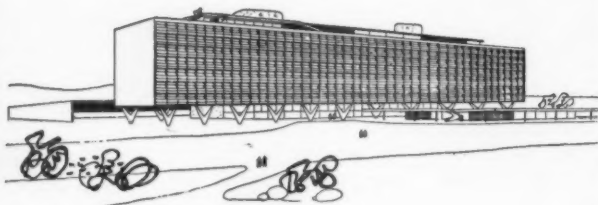




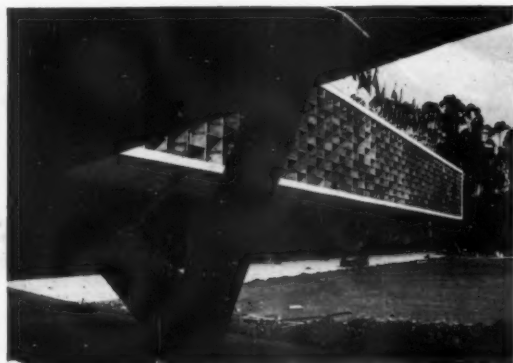
4



5



6



7

4, sketch of auditorium and planetarium. 5, section of auditorium. 6, agriculture pavilion with a close-up of the state pavilion between the pilotis, 7.

Paulo—which lie at the extremities of the pedestrian-sheltering marquise, have undergone considerable modification. Originally projected with half-sunk ground floors and "Peixe"-type vaults sheltering unobstructed upper floors of considerable size, they were eventually built in the more customary pile and slab technique with several floors, roofed by runs of small shell-vaults concealed from outside view by upstand parapets. In the management of the pilotis on which these blocks are carried, Niemeyer has demonstrated characteristic originality in the invention of new plastic forms. Balancing the auditorium-planetarium complex on the other side of the main circulation space is a lakeside restaurant, and lying just outside the main composition is the Agriculture Building and its ancillary structures which are intended to provide permanent accommodation for government offices. The brilliant landscaping effects are the work of Roberto Burle-Marx, who worked closely with Niemeyer throughout, and a description of them will be found on p. 244.

## UNIVERSITY BUILDINGS

Large academic building programmes are currently being pursued at both Rio and Sao Paulo, and at the former, which was inspired by Dr. Horta Barbosa, building work has already commenced. The teaching clinic for pediatric studies is completed and won for its architect, Jorge Moreira, a prize at the Sao Paulo Bienal. The same architect's building for the Faculty of Architecture, a large simple block with smaller buildings at its base, will provide a national centre for architectural studies, since this will be Brazil's senior university. In Sao Paulo there are no comparable advantages of site, and great ingenuity in the deployment of buildings is required. The large new hostel for students is fitted on to a triangular sloping site, and the architect, Rino Levi, has situated the men's accommodation in the big stepped block, twelve storeys high, which curves round the back of the site. Women's rooms are in the two eight-storey blocks and the lower blocks accommodate club, administrative and sanatorium facilities. The same architect had to deal with another tricky site for the maternity hospital, but turned it to advantage to provide multi-level access to his necessarily complicated internal circulation. Other noteworthy projects for the University of Sao Paulo include a gymnasium/stadium complex, even larger than his IVth centenary scheme, by Icaro de Castro Mello, and the hydraulics laboratory, designed by Ariosto Mila, with its 600-foot test-canal and complicated system of header-tanks and reservoirs.

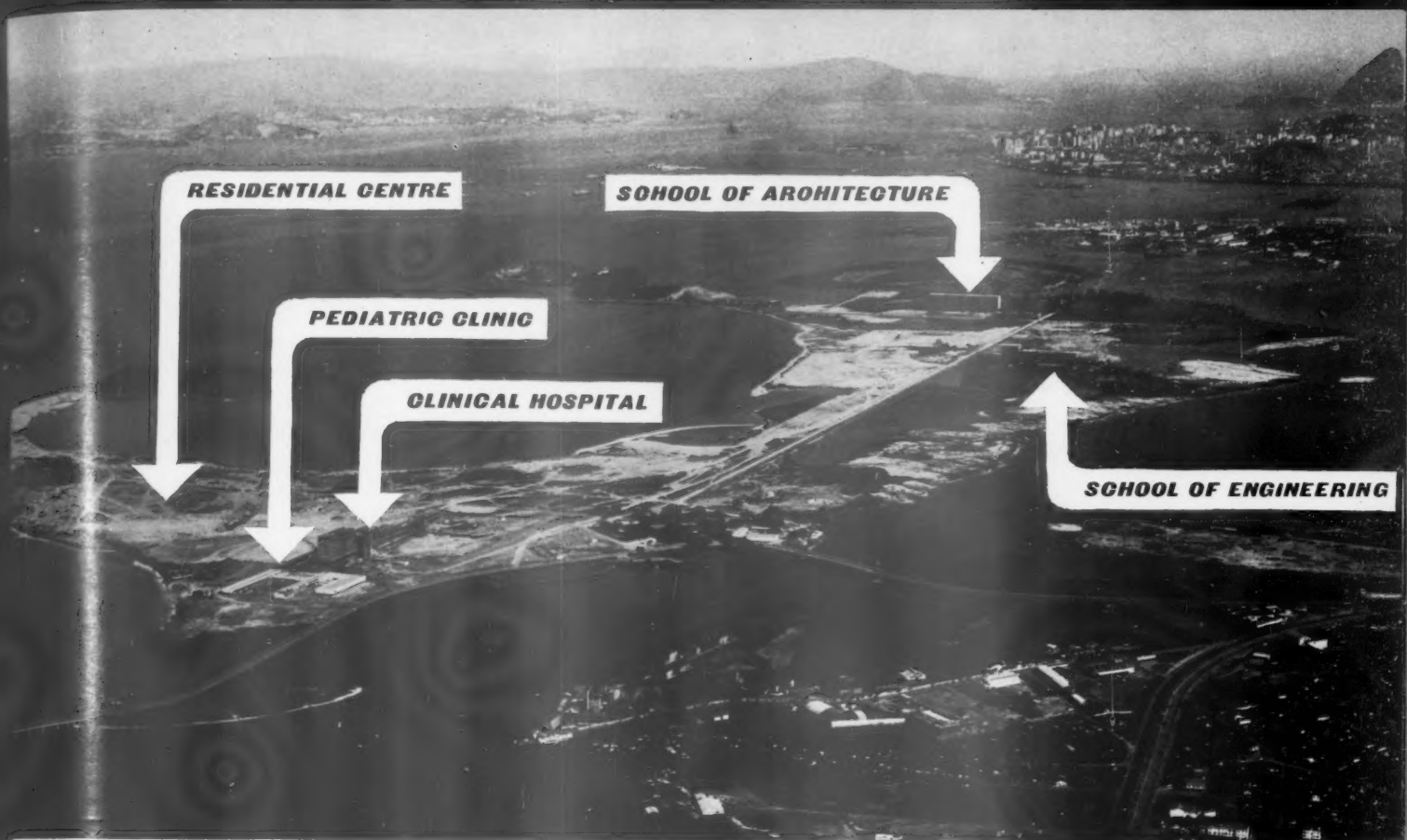
## rio de janeiro



9, school of architecture by Jorge Moreira.



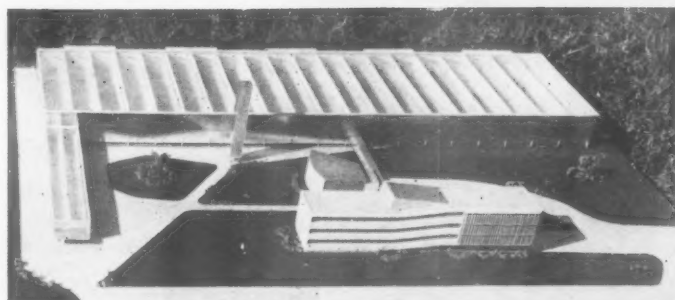
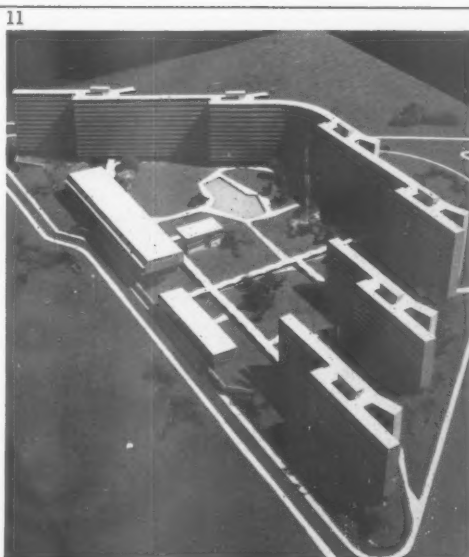
10, pediatric clinic by Jorge Moreira.



of Rio University in the Bay of Rio.

11, students' hostel and 12, maternity hospital, both by Rino Levi. 13, the hydraulics laboratory by Ariosto Mila and 14, the gymnasium and stadium, by Icaro de Castro Mello.

**sao paulo**



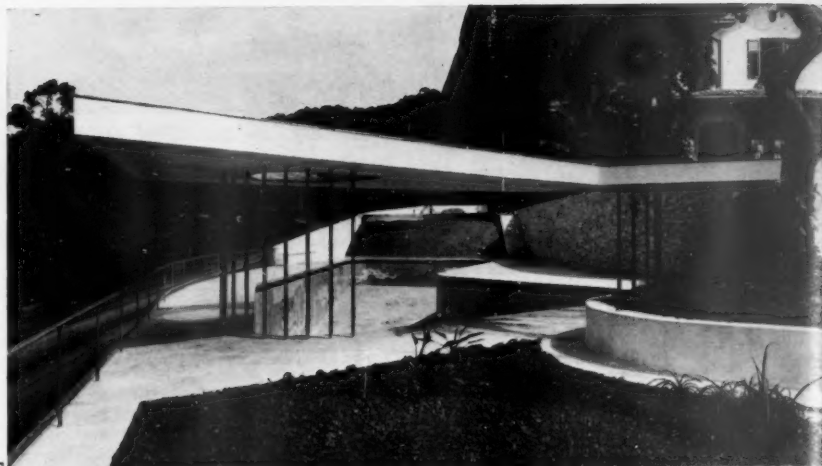
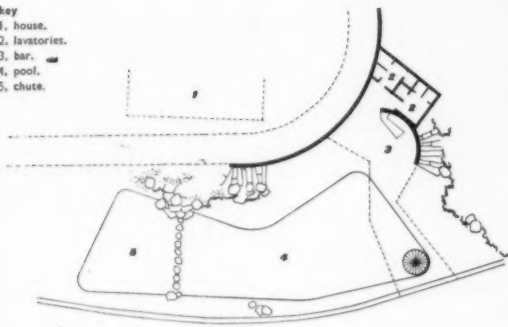
## SWIMMING POOL

architect, Sergio Bernardes

Situated just outside Rio, above a turning of the Avenida Niemeyer, this pool is an excellent example of the results which may be obtained by close architect-decorator collaboration. The pool was designed by Sergio Bernardes to give full effect not only to its unusual site, but also to the under-water mosaics by Roberto Burle-Marx. The canopy is a daring reinforced concrete structure for which the calculations were done by Newton Kubrusly.

15, the canopy, and 16, part of the underwater mosaic.

key  
1, house.  
2, lavatories.  
3, bar.  
4, pool.  
5, chute.



15

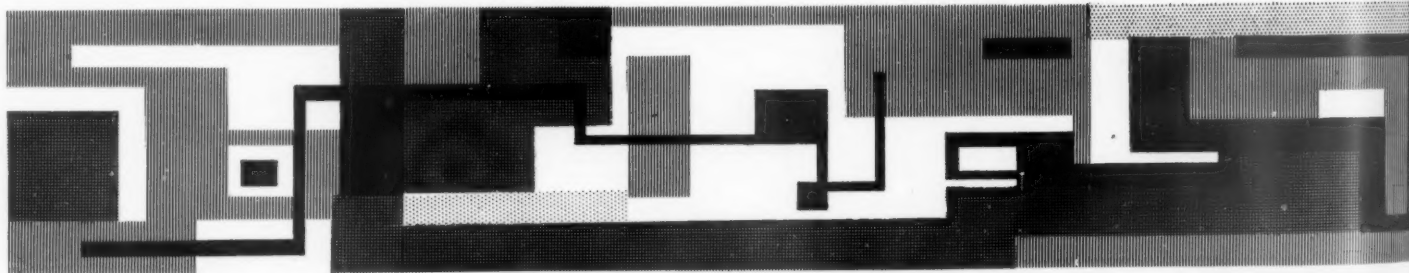


16

## GARDENS

Though it is more usual to find Roberto Burle-Marx working as consultant or collaborator to an architect, he has a considerable independent practice both as garden designer and as muralist. He is seen in both guises in a design for a private garden near Rio, where his characteristic free form planting is combined with a large mural composition in the more rectilinear style which he has developed recently, executed in small mosaic squares. One of his grandest conceptions is the Somlo garden at Ciuaba, where the planting and lakes are set amid the dramatic hills above Petropolis, to which the horizontal colour-composition must act as a foil. His use of plants with low-growing habits is necessitated by his painterly conception of garden art, which requires that the eye shall be able to survey the whole composition on the flat—a point which is well brought out by his complex and rectilinear garden layouts for the Sao Paulo exhibition grounds, which could never be appreciated if any parts of the composition were masked by shrubs or trees. An example of an independent work by this artist within a larger architectural scheme is his tiled mural for Jorge Moreira's pediatric clinic, a composition of blue and various yellows executed in azulejos, set off by the yellows and greens of the planting in front.

17, design of a mural in a private garden near Rio, by Roberto Burle-Marx.



18 and 19, the Somlo Garden at Ciuaba.

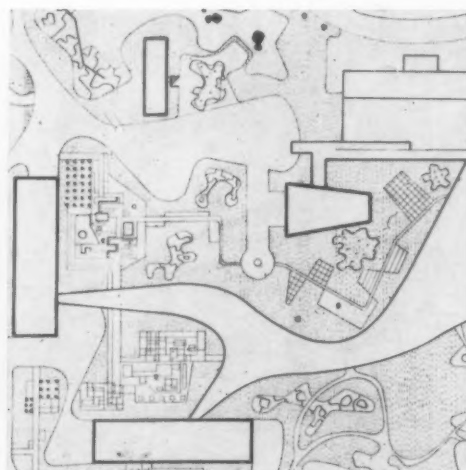




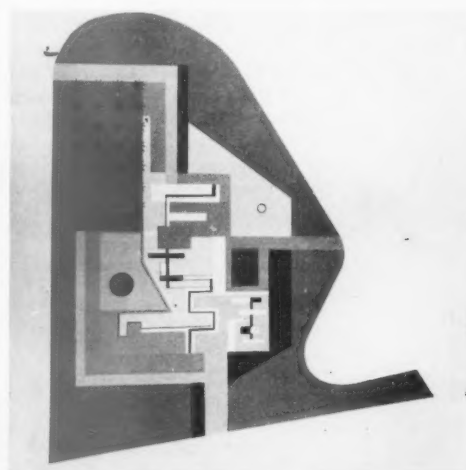
Another Burle-Marx garden with a similar mural is seen in 20, above.



21, mural at the pediatric clinic, Rio University.



22, plan of part of the Sao Paulo exhibition.



23, one of Burle-Marx's detail studies.

## OFFICES

## CARAMURA BUILDING

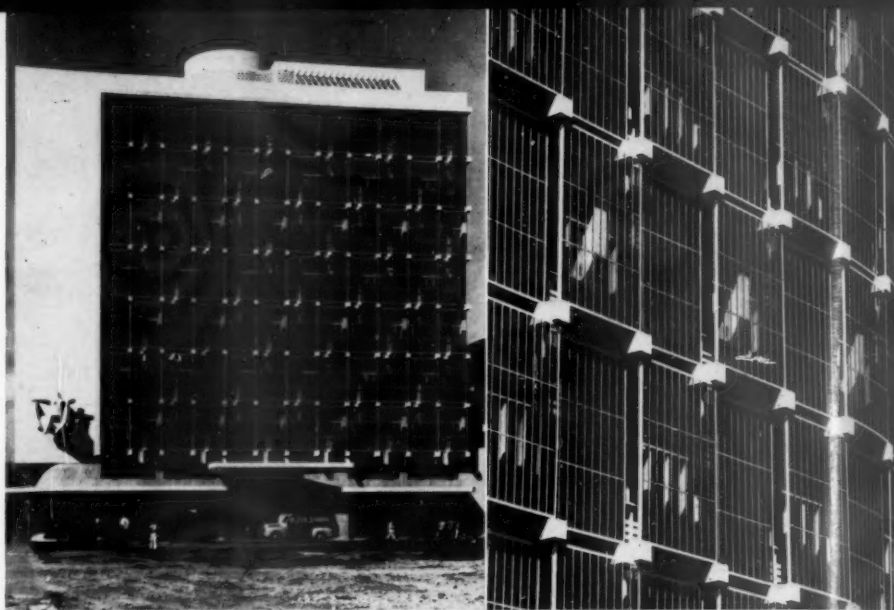
Architect: Paulo Ribeiro

The growing reputation of the young architect Paulo Antunes Ribeiro, takes much of its strength from the elegant Caramura building in Bahia. His eminently successful treatment of the façade is original without being forced, and is a valuable contribution to the problem of sun-control. The brise-soleils are carried on the projecting ends of floor beams, and consist of light frames carrying screens made from a wire mesh whose horizontal elements are in the form of flat strips, thus providing a form of permanent venetian blind whose grid is so small that it does not appear to slice up the view of the sea when one looks out of the building, but does effectively exclude the glare. Most of the exterior of the building is faced with small white ceramic tiles. The roof garden is the work of Roberto Burle-Marx; the sculpture on the façade is the work of Jaques Gotard, a prix de Rome winner from Lyons, whose other Brazilian works include the sheet-metal figures on the walls of Sergio Bernardes' round church in Sao Paulo (AR, July, 1953).



27

24, the facade; 25 and 26, details of the brise-soleils. 27, the sculpture by Jaques Gotard, also seen to the left of the brise-soleils in 24.



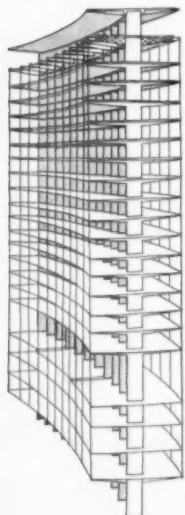
26



## SUSPENDED BUILDING

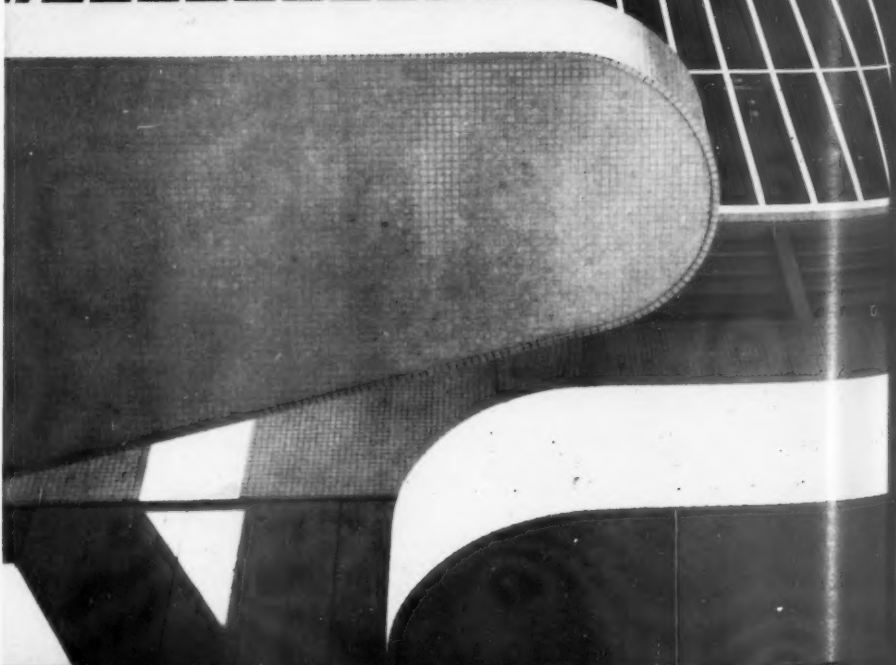
Architects: Helio Duarte and Carvalho Mangé

The nature of the functional programme encouraged the projectors of this second prize winning design, Helio Duarte and Carvalho Mangé, to break away from the customary post and slab routine of Brazilian office-block procedure, and develop a structure based on a spinal rank of very deep-section rectangular columns.



Low ceiling heights were inherent in the design and left insufficient head-room for the downstand beams which would be required if the floors were to be cantilevered from these columns, and they are therefore suspended at their outer edges by tension members dependent from deep trusses in the lower of the two attic floors. As a result, the floor space and the outward views are remarkably free from encumbrance by vertical structure, or by services, which are concentrated in the spine.

28





**FLATS****FLATS IN SAO PAULO***Architect: Oscar Niemeyer*

Entirely characteristic of the inventive mind of its designer, Oscar Niemeyer, this building in Sao Paulo occupies a tapered corner site where the routine 'flat-iron' type of plan would nevertheless have been wasteful of space. Closely related in its exterior treat-

ment to a scheme for a bank in Belo Horizonte, this version is visually more successful in sweeping its close-spaced fins right round the end of the block, and changing over to vertical slatting at a point which corresponds not only to a change in insolation problems, but also to a change in interior function, since the vertically slatted sun-breakers shelter the kitchen/service zone of the apartments. The pierced horizontal

shades run three to a floor, the main windows being between the middle pair, with a smaller light high up against the ceiling under the upper screen.

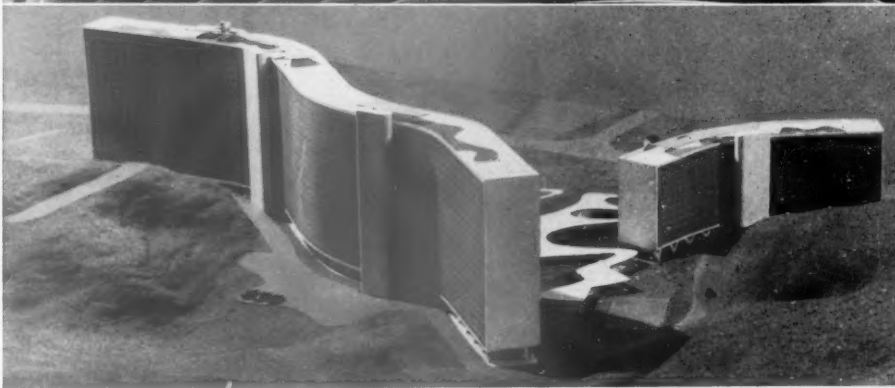


30

**FLATS NEAR PETROPOLIS***Architect: Oscar Niemeyer*

A revised version of the Maua (Quitandinho) project outside Petropolis (AR, July, 1953) this scheme provides only about two-thirds the number of apartments which the original project offered, and, being disposed in two blocks, spreads them over a slightly greater area of land. The larger of the two new blocks is clearly related to the original scheme for the Copan Hotel in Sao Paulo, and there can be little doubt that the close studies in economics and structure which Copan has involved have had their effect on the Maua project. Accommodation will continue to be in semi-duplex apartments, this admirable type of section being obtained by staggering the floor on one side of the block half a storey higher than on the other.

31

**HOUSES****HOUSE IN PETROPOLIS***Architect: Sergio Bernardes*

Like other dwellings by Sergio Bernardes, this concrete-framed house makes ingenious use of its site. The slope on which it stands faces the sun, and for this reason the roof rises in the same sense as the hill, thus affording large windows on the shaded side of the house, and only the low-eaved slot of the access balcony on the downhill side, while added sun protection is given by the vertical pivoted louvres of varnished wood. Shaded space beneath the house is also made by excavating back into the hill and carrying the house structure on the retaining wall at the back, columns at the front. The retaining wall, of dry stone construction, extends to enclose part of the garden.

247

32

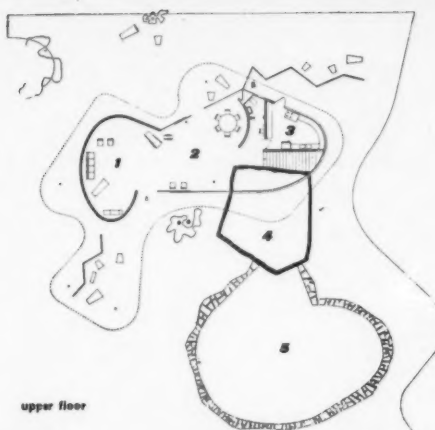




## HOUSE AT GAVEA

Architect: Oscar Niemeyer

Conceived as a group of free-form planes creating floor, terrace and roof areas, this highly original design by Oscar Niemeyer, which is also illustrated in the frontispiece on page 214, occupies a superb site between hills overlooking the ocean. The bedrooms are on the lower floor, with access by a staircase down the side of the rock which lies between the house and the pool. The daytime living space on the upper floor is contained between two loops of solid walling at either end, but between them walls of glass permit a view straight through the house to the sea.



lower floor

section

39, opposite, the magnificent site of the Niemeyer house, looking towards the sea.

- key
- 1. living space.
  - 2. hall.
  - 3. kitchen.
  - 4. rock.
  - 5. pool.
  - 6. bedroom.
  - 7. parlour.



33, looking into the living space, and 34, looking through the house towards the sea.

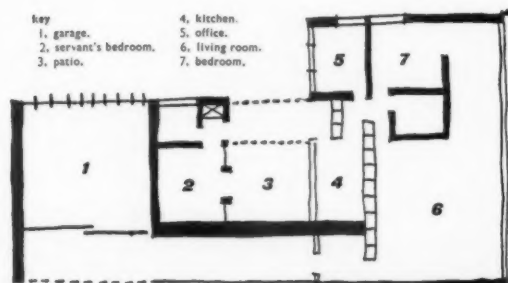


40, a section of the house by Reidy for Miss Carmen Portinho, the director of housing in Rio, is seen superimposed on its mountain-side site, opposite

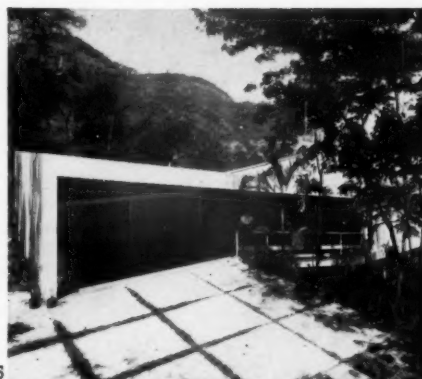
## HOUSE AT JACAREPAGUA

Architect: Affonso Reidy

The apparently conventional 'butterfly' section of this house by Affonso Reidy does not conceal the fact that this is a design of considerable ingenuity. The very steeply sloping site—a common factor in houses on the outskirts of Rio—imposes limitations, but also offers compensations. The main part of the house, though raised on stilts, is somewhat lower than the entrance side, and a dropping ramp takes one down to a door leading into the living room. The rest of the upper part of the house provides service accommodation with its own entrance court. The raising of the main block on stilts, not only lifts the living room windows clear of the trees for the sake of the view, but leaves space underneath for a sitting-out terrace.



- key
- 1. garage.
  - 2. servant's bedroom.
  - 3. patio.
  - 4. kitchen.
  - 5. office.
  - 6. living room.
  - 7. bedroom.



35



36

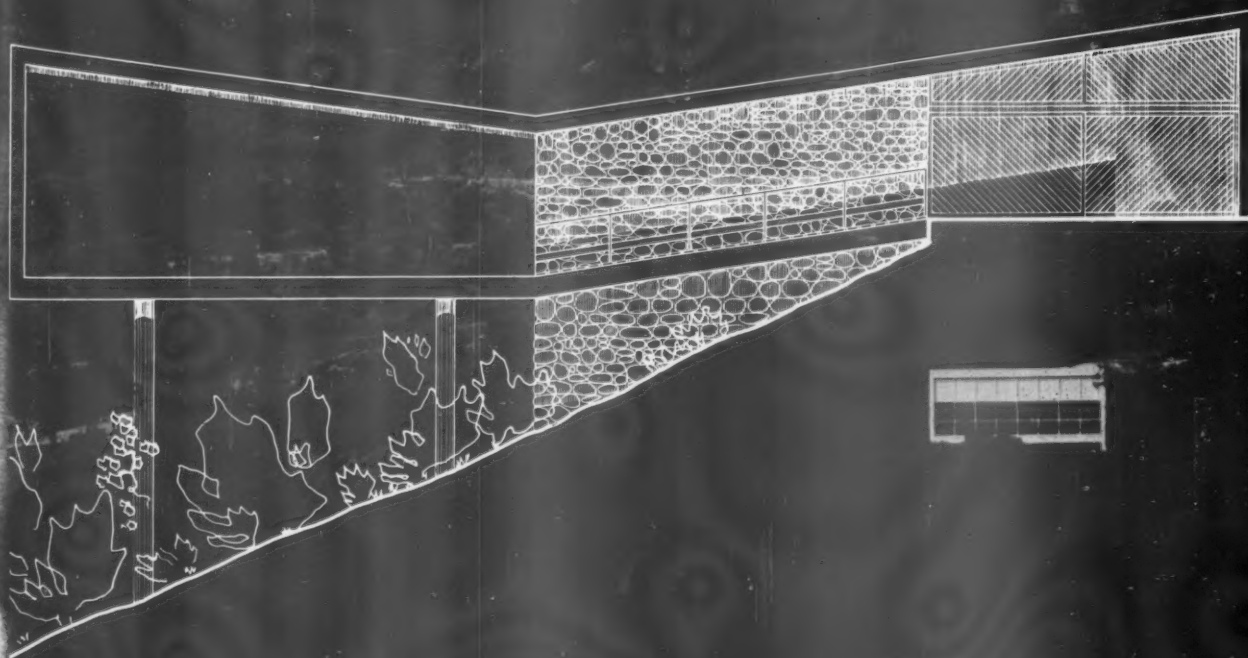


37



38

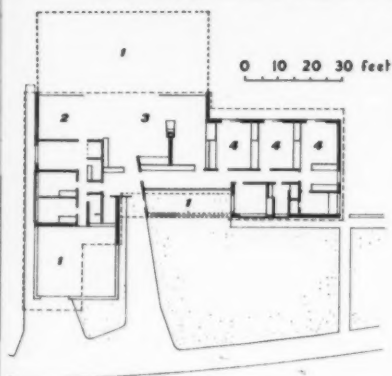
35, the entrance side. 36, the main block from below. 37 and 38, two views of the living room.



## HOUSE AT SAO PAULO

Architect: Rino Levi

In this residence for a doctor, the architect Rino Levi has made bold use of an enclosed pergola, even to the extent of bringing the built-over percentage of the site up to the maximum permitted by the zoning regulations. A straightforward construction in brick with corrugated asbestos roof, the house is oriented for sun protection from noon onwards, since the mornings are often cloudy in Sao Paulo. The pergolas, or patios, help to give protection against the sun, effectively increase the socially usable area of the house, and create an environment, not unlike a growing frame, which is favourable to some types of plants.

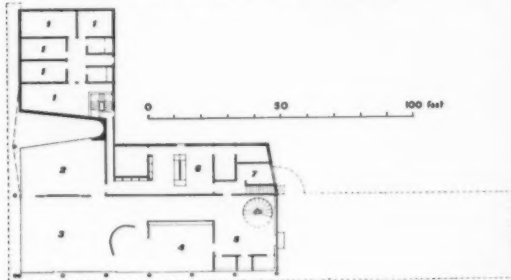


key  
1, patio.  
2, dining space.  
3, living space.  
4, bedroom.

## HOUSE AT GAVEA

Architect: Paulo Ribeiro

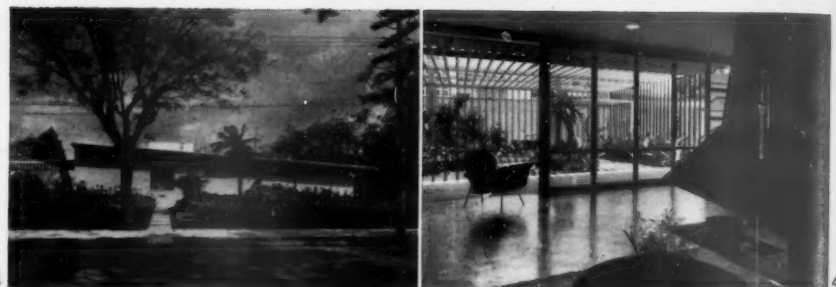
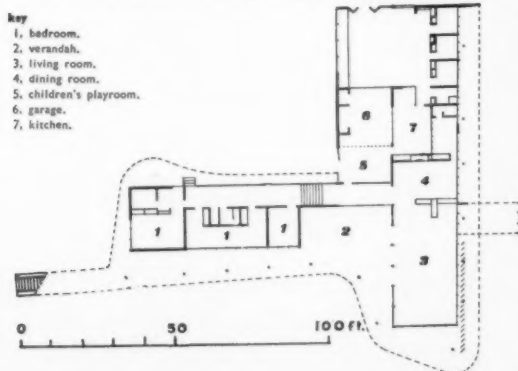
Designed by the rapidly advancing architect Paulo Antunes Ribeiro, this straightforward design will be notable for the lavish quality of its equipment, both functional and æsthetic. Extensive use will be made of ceramic facing on the attic storey, a complete kitchen by a well-known manufacturer is being imported from France, and both Burle-Marx and the painter Portinari will contribute to the decoration.



## HOUSE AT JACAREPAGUA

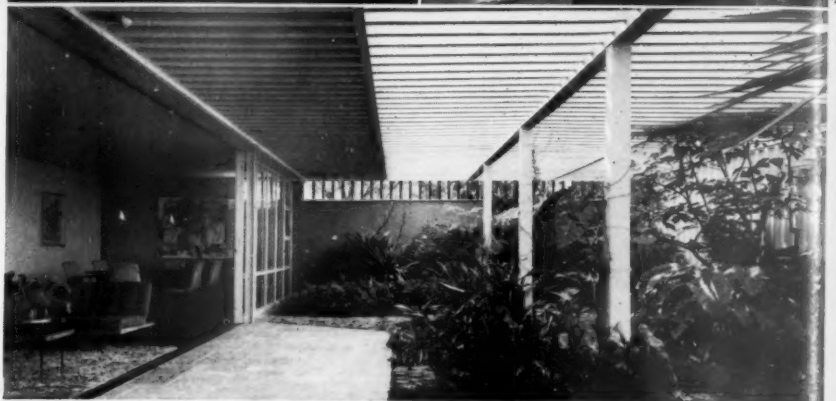
Architects: M. and M. Roberto

Free-standing on a level site, and therefore in need of maximum climatic protection, this large residence called forth a most ingenious solution from its designers, the Roberto brothers. Overhead protection is enhanced by a garden covering almost the whole roof area, and screens are hung round the entire periphery of the structure, enclosing the service court as well as the living quarters. The raising of the bedroom block for increased privacy should also be noted.



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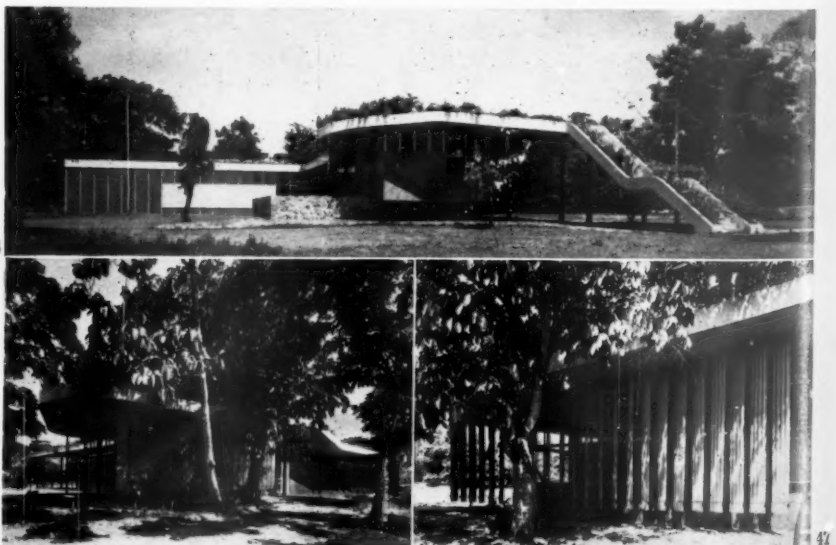
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41, street front. 42, the living space. 43, the patio with the dining space on the left.



44

left, ground floor plan: key. 1, servants' rooms. 2, dining room. 3, living room. 4, library. 5, hall. 6, kitchen. 7, parlour. above, first floor plan. key: 1, servants' rooms. 2, living room. 3, air conditioning. 4, studio. 5, gallery. 6, bedrooms. 7, box room. 8, laboratory. 9, photographic dark room.



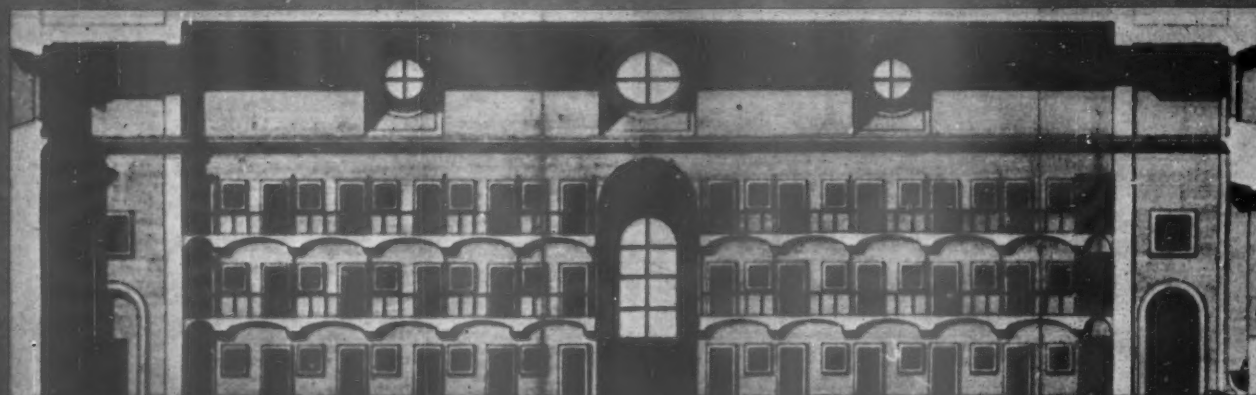
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# PATTERN OF THE LAW

Thomas A. Markus



The individual cells of reformed prisons made internal visibility a key problem. In the *Silentium* of Clement XI's San Michele, above, the need was to afford every prisoner a view of the altar at which daily Mass was celebrated, but before the end of the eighteenth century the problem had inverted itself and become one of rationalised supervision of banks of cells from one central point, and thus led to the strangely formalised radial plans which are discussed in the article below.

The efforts made in recent years to gain a clearer understanding of nineteenth century architecture have been largely successful. Thanks to the pioneer work of Giedion, Hitchcock, Pevsner, Bannister and others, developments in such buildings as mills, offices, exhibition halls and markets have come to be recognized as important roots of our own architecture. While the structural changes that were taking place in these building types had the effect of producing 'spatial' kinds of plans, in which the designer was concerned to give the client the maximum amount of unobstructed, regularly organized space, another, more traditional, system of planning was developing, which may be called 'cellular.' Here composite plans, usually of geometric regularity, were built up from a multiplication of a small basic unit. Sometimes this unit was contained in a larger architectural element, such as the bed in the hospital ward. But the clearest expression of this type of plan can be seen in prisons, where the unit, the cell, was itself an apartment. Here control of a large number of prisoners by a comparatively small staff called for imaginative and skilled planning.

Up to the last quarter of the eighteenth century few English prisons were designed on any systematic lines. Both large and small institutions usually consisted of an agglomeration of small two- or three-storey structures, arranged in a more or less haphazard way round small courts. John Howard made the first important suggestions on improved prison architecture when he published his epoch-making survey, *The State of the Prisons in England and Wales*, in 1777. The work was the result of many years' first-hand experience in prison visiting and inspection. He gave a detailed description of every English prison as well as of some Continental examples, with additional

matter published in the *Appendix* three years later.<sup>1</sup>

The picture Howard gives is almost uniformly depressing. Prisons were foul, insecure, dark, damp and insanitary. The prisoners were underfed, diseased, dirty and morally at a lower level than when they were first committed; brutality and corruption were common amongst gaolers, not to mention inefficiency. The most famous English prison of the time, Dance's Newgate, but recently completed, did not escape censure: '... it has some manifest errors. It is now too late to point out particulars.' An illustration and description of it was only included '... to satisfy the curiosity of my Readers.' The New Prison at Bath, 2, completed in 1772 according to earlier designs by the Bath plumber and painter, John Attwood, must have been one of the best planned of its day. There was a spacious central court surrounded by the 'wards' which were placed over the ground floor 'private prisons.' But Howard dismisses it with a complaint of 'offensive sewers' in the court.

The most striking aspect of Howard's recommendations is his absolute belief in architecture as the basis for any effective reform. His catalogue of shortcomings is followed by practical proposals, which open with an act of architectural faith: 'In order to redress these various evils, the first thing to be taken into consideration is the prison itself.'<sup>2</sup> Several broad principles are laid down: air, hygiene, light, control, security, warmth and adequate separation between different classes of prisoners (according to sex, age and the nature of the crime). Almost all these were to be achieved by a single

architectural idea, which formed the main theme of his material proposals, that of placing the wards and cells on the first floor, over open ground floor arcades.<sup>3</sup>

But Howard's ideal County Gaol, 3, shows little advance, in fact, over contemporary practice. The various blocks were arranged, perhaps, in a slightly more orderly way and there was a grudging air of spaciousness about the plan, but the general impression is still that of an 'agglomeration' rather than of an organized pattern. Some designs followed this plan almost exactly; perhaps the two most typical were Dance's scheme for Guernsey Prison (1807) and John Call's for Bodmin Gaol (1779).<sup>4</sup> With all his moral fervour, Howard was unable to make that leap of the imagination without which no real advance in prison architecture could take place. This is all the more curious since his most highly praised Continental examples clearly pointed the way. Only in one scheme, prepared at the very end of his life and published posthumously, did he follow this lead; it was for an ideal Penitentiary or House of Cor-

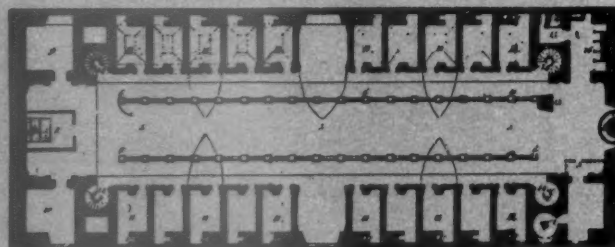
rection (1789), 4. Here there were two great cell blocks, in the form of Greek crosses, with a chapel forming the connecting link at the centre.

Continental planning was based, in general, on formal, organized patterns. Howard was impressed with almost all the examples he saw. One of these was the San Michele in Rome, a great compound institution containing an asylum, orphanage, hospital and prison. A typical portion was the 'Silentium,' a block for the separate confinement of male prisoners, built as the Papal prison by Clement XI in 1704, 1. It was the first important cellular prison in Europe. There were three tiers of cells on either side of a central 'hall,' each having a direct view of the altar placed at one end, thus enabling prisoners to assist at daily Mass from their cells. Another building which Howard visited was the Casa di Correzione at Milan, 5; its plan struck him as 'noble and spacious.' Here the chapel was placed in circular apartment at the crossing of the main cell blocks.

But the most famous Continental prison at the time of his visits was the great Maison de Force at Ghent, 6. Although the Greek cross and other plans derived from it had been traditional in Europe through-

<sup>1</sup> *Ibid.*, pp. 42-43.

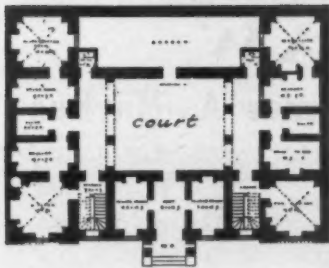
<sup>2</sup> The original drawing for both these schemes are in Sir John Soane's Museum, London.



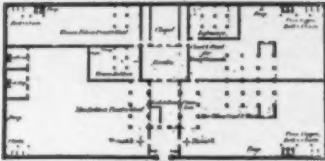
1, *Silentium* of the Papal prison.

<sup>3</sup> John Howard, *The State of the Prisons in England and Wales*, etc., Warrington, 1777. *Appendix*, Warrington, 1780.

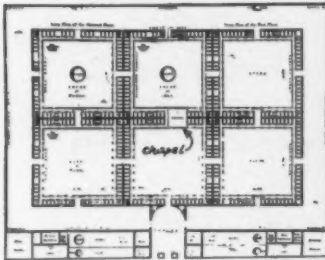
<sup>4</sup> *Ibid.*, p. 40.



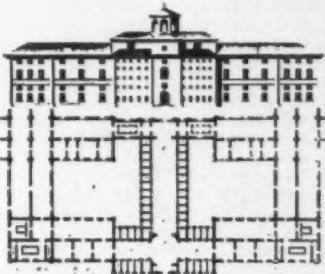
2, New Prison, Bath.



3, Howard's ideal County Gaol.



4, Howard's ideal Penitentiary.



5, Casa di Correzione, Milan.

out the seventeenth and eighteenth centuries, especially in institutional buildings, where the attempt was made to allow all the inmates to have a direct view of the central altar or chapel, the Ghent plan was the first in which a number of long narrow blocks were arranged radially about a common centre for a number of functional reasons. It was thus hoped to increase light, air, security and visual control over the separate blocks. The Maison de Force was commenced in 1773 according to designs by Count Hyppolite Vilain XIV,<sup>2</sup> a one-time Mayor of the City; it was never completed. Eight trapezium-shaped courts were joined to each side of a central octagon, which was surrounded by the administrative buildings. The cells, mostly in three- and four-storey masonry blocks, were arranged along the outer circumference as well as along the radial divisions between the eight courts. They were placed back-to-back, with external corridors and arched, open galleries connecting them. Behind the arches of the latter the whole structure was vaulted in masonry, to '... prevent fire from running from story to story.'<sup>3</sup> This was a remarkable structural achievement. The fame of this, the first radial prison, soon began to spread, as we shall see presently.

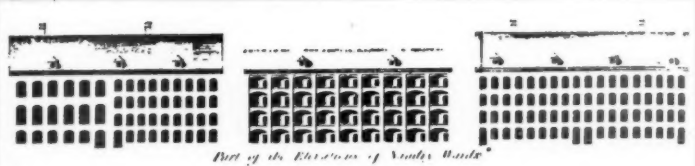
The standard of prison design in England became much improved within a few years of the appearance of Howard's work. In 1782, William Blackburn<sup>4</sup> won the premium offered by the newly appointed Commissioners for Penitentiary Houses for the best design submitted; he was commissioned to build numerous County Gaols and other penal structures, including the prisons at Monmouth, Ipswich, Salford, Oxford, Liverpool, Preston, Dorchester, Lewes and Limerick. He also assisted W. Haycock in the design of Shrewsbury Gaol. When he suddenly died, in 1790, on his way to Glasgow to discuss designs for the new gaol there, he was succeeded by R. F. Brettingham,<sup>5</sup> who executed several of his

<sup>2</sup> Count Vilain, *Mémoire sur les Moyens de Corriger les Malfaiteurs et d'insinuer à leur Propre Avantage et de les Rendre Utiles à l'Etat*, Ghent, 1775.

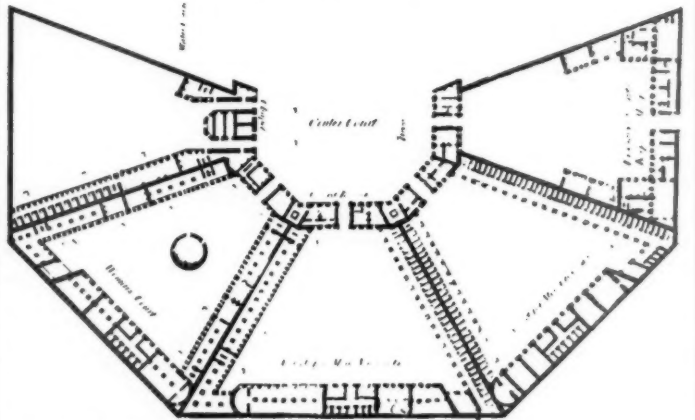
<sup>3</sup> Howard, op. cit., p. 141.

<sup>4</sup> *Dictionary of the Architectural Publication Society*, 11 Vols., London, 1853-92, Vol. 6, s.v. 'Penitentiary.' See also *Dictionary of National Biography*, s.v. 'Blackburn, William,' and John Howard, *An Account of the Principal Lazarettos in Europe*, etc., London, 1791, pp. 155, 170-71, 206; also *Report*, etc., of the Society for Giving Effect to His Majesty's Proclamation against Vice, Immorality, etc., London, 1790, pp. 10-11.

<sup>5</sup> *Dict. A.P.S.*, *ibid.*, and *D.N.B.* s.v. 'Brettingham, R. F.'



Part of the Plan of the Maison de Force



8, Maison de Force, Ghent.

predecessor's designs as well as a few of his own. The latter included the prisons at Reading, Hertford, Poole, Northampton and Downpatrick. The importance of Blackburn's and Brettingham's work is discussed below.

Amongst the unsuccessful competitors in the 1782 competition was Sir John Soane; he submitted two unique schemes, both based on formal, centric lines. The first was for a male penitentiary for 600 convicts, 6, and the second for a similar building for 300 females, 7. The cell layout in each case was based on a complex geometric pattern in which the chapel formed the focal centre. Amongst other well-known architects who tried their hand at prison design about this time was John Nash who designed Carmarthen Gaol in 1789 and, a little later (1795-97) Herefordshire County Gaol. He contributed little to planning progress. Thomas Harrison's plan for Chester Castle, won in competition in 1788 and executed between 1793 and 1820, had some interesting planning features: the cells were arranged in a semi-circular block with the offices and gaoler's quarters in the straight block forming the diameter.

Probably the most advanced interpretation of Howard's ideas were

Gloucester Gaol (1791), designed by Sir G. O. Paul<sup>6</sup>, who also introduced the 'separate' system of confinement while he was Governor there, and Charles Middleton's Cold Bath Field Penitentiary, Middlesex (1788-94).<sup>10</sup> Similarly inspired, too, was R. Baldwin's proposed Battersea Penitentiary (c. 1792).<sup>9</sup> But it must have become evident that such plans, all of which contained internal courts and had no single, central point for inspection or access, were not capable of further development.

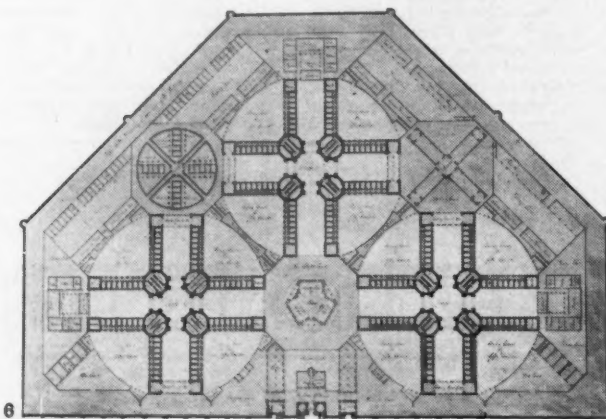
In the two years before the commencement of Middleton's building, Blackburn's first two prisons were built or begun: Ipswich Gaol (1786),<sup>11</sup> 10, and the New Bayley Prison at Salford (1787-90),<sup>12</sup> 11. In

<sup>6</sup> *D.N.B.*, s.v. 'Paul, Sir George.' Paul was the author of an interesting work, *Considerations on the Defects of Prisons*, London, 1784. J. Neild, in his *State of the Prisons in England, Scotland and Wales*, etc., London, 1812, mentions Paul's work and shows the effect of his suggestions.

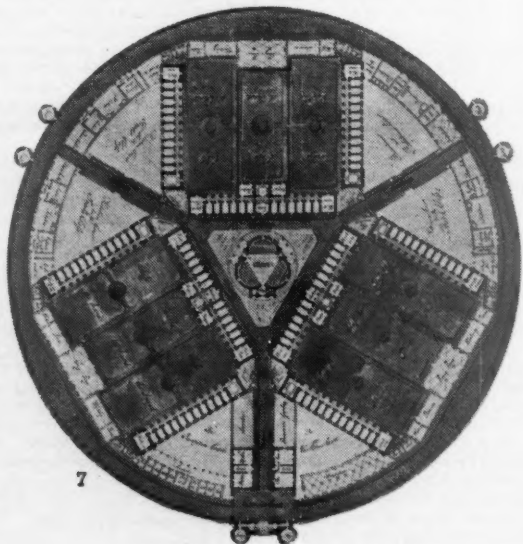
<sup>10</sup> Full details and drawings are given in Charles Middleton, *Plans, Elevations and Sections of the House of Correction for the County of Middlesex, to be Erected in Cold Bath Field*, London, 1788.

<sup>11</sup> G. R. Clarke, *The History and Description of the Town and Borough of Ipswich*, etc., London, 1830, p. 318.

<sup>12</sup> W. E. Axon (ed.), *The Annals of Manchester*, London, 1886, pp. 109 and 114. Also *D.N.B.*, s.v. 'Bayley, B.T.'



6, Soane's plan for a male and, 7, for a female Penitentiary.



7



both there were four cell wings radiating at a distance of 90° from a common centre. The radial plan, in its simplest form, the Greek cross, had arrived in England. It is true that the idea had been potentially present in such earlier designs as Soane's, but now it was used, for the first time, as a simple, functional basis for prison planning. Although Blackburn's and Brettingham's prisons followed this plan, during the next few years, other designers and reformers, mostly better known, did not grasp its significance. Howard, Paul, Nash, Harrison and the others continued to produce their non-radial plans, although the inclusion of the Greek cross cell block in parts of their designs may have been due to Blackburn's influence. But the radial plan might have remained without effect had it not been for the appearance of another reformer.

The reformer was Jeremy Bentham. Although he is less well-known in connection with prison reform than Howard, there can be no doubt that his influence on prison architecture was, nevertheless, far greater. Jurist, essayist, radical politician and inventor, Bentham tackled a wide range of problems. To each he brought an almost childish enthusiasm and a mind incapable of grasping, outside legal matters, practical difficulties. His architectural ideas were in every way typical and centred round one original conception.

Samuel Bentham,<sup>12</sup> Jeremy's brother, a naval engineer by profession, left England for Russia in 1778 on board a naval vessel. After various travels he arrived in St. Petersburg in 1780. During the next two years he travelled all over Russia, making detailed studies of naval, military, mining and engineering affairs. On this return to St. Petersburg in 1782 he presented his report to Catherine the Great who was so pleased with him that she immediately commissioned him in the Russian navy. Soon he was employed by Prince Potemkin on his great and extravagant schemes at the naval

town of Kritchew in South West Russia. Here he remained almost continuously till his return to England in 1791, building dockyards, ships, arsenals, warehouses and barracks. Jeremy left England in 1785 to pay his brother a visit and it was while he was staying at Kritchew, in 1787, that he wrote a letter to a Mr. Wilson in England.

This letter was apparently occasioned by an announcement in an English paper concerning the proposal to erect a national penitentiary. '... It occurred to me that the plan of a building, lately contrived by my brother, for purposes in some respects similar, and which, under the name of the *Inspection House* or *Elaboratory*, he is about erecting here, might afford some hints for the above establishment. ... Indeed I look upon it as capable of applications of the most extensive nature, and that for reasons which you will soon perceive.'<sup>14</sup> These tentative hints soon developed into a scheme which became his lifelong passion; he usually called it the Panopticon.

Samuel's idea, from which Jeremy claims to have derived the Panopticon, was for a circular arsenal, to be built in order to overcome the great shortage of skilled workmen who could act as foremen. In such a building the workers would have been placed on the several floors against the outside wall, while the foremen could be situated in an inspection tower in the centre. Due to the outbreak of the Russo-Turkish war the scheme was never executed.

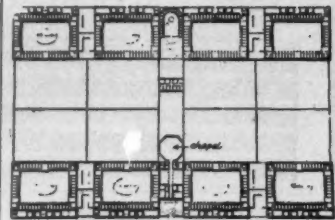
The detailed description of the Panopticon was not published till 1791,<sup>15</sup> together with a *Postscript*,<sup>16</sup> in which further particulars were given. Basically the building was to be a great masonry cylinder; the first design (1787), 12, was four storeys high; the second (1791), 13, was increased to six. The cells were arranged round the out-

side walls, with radiating partitions and open, internal galleries connecting them at each level, accessible from two or three staircases. In the centre of the whole structure was to be the inspection tower of three storeys, the topmost containing the prison chapel. The planning details were worked out to a degree which would have amazed and amused a professional architect; sight lines between the cells and the inspection tower, from the staircases, in the chapel, to and from the external yards and between cells facing each other were all carefully calculated.

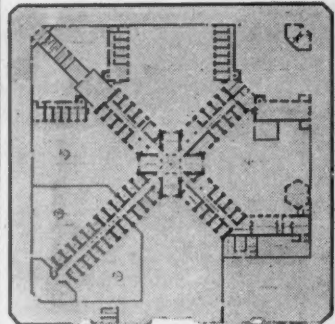
By 1791 Jeremy Bentham was advocating Panopticons for a wide variety of purposes; workhouses, schools, asylums, hospitals and mills were included. His faith in the idea, reflecting an even greater belief in architecture as the basis for progress than Howard's, was graphically represented in the front of the *Postscript* in the form of a table; here its 157 advantages were classified and enumerated. The opening paragraph summed them up: 'Morals reformed—health preserved—industry invigorated—instruction diffused—public burthen lightened—Economy seated as it were upon a rock—the Gordian knot of the Poor Laws not cut but untied—all by a simple idea in Architecture!'

Bentham had ready solutions for planning problems outside the strict limits of internal arrangement. He devised an intricate system of controlled exercise yards, where prisoners were to be divided according to such divisions as 'Daring Raw Offenders,' 'Thoroughbred Housebreakers' and 'Decent Females.' Another scheme was for a compound plan in which three or more Panopticons could be combined, 14. But even more astonishing than the planning was the proposed construction.

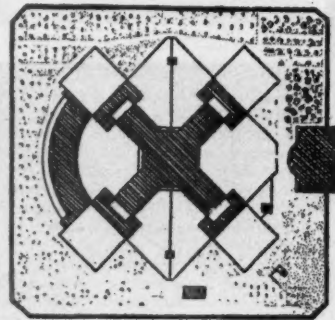
It was intended to make extensive structural use of iron, for three reasons: air, light and strength (this included fire-resistance). By 1791 cast-iron columns had been used in several English buildings, notably mills and churches, and also in bridge construction; it was also the year in which the first mill using iron floor



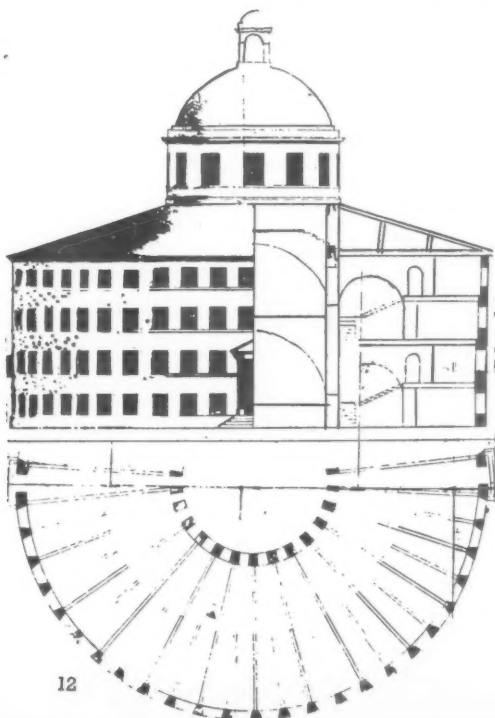
9, Proposed Battersea Penitentiary.



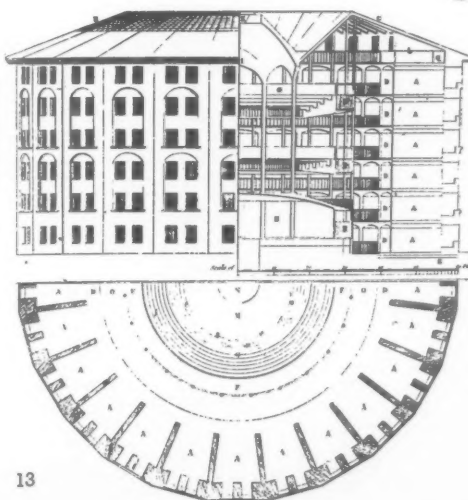
10, Ipswich Gaol.



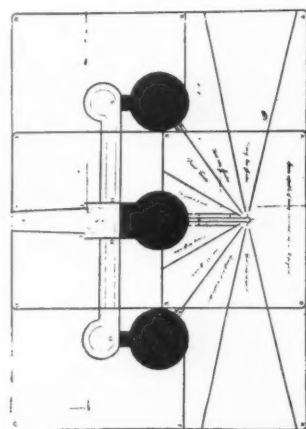
11, New Bayley Prison, Salford.



12



13



14

12, Bentham's first Panopticon design; 13, his second design, and 14, plan for a compound Panopticon.

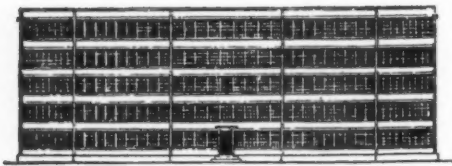
<sup>12</sup> D.N.B., s.v. 'Bentham, Samuel.'

<sup>14</sup> John Bowring (ed.), *The Works of Jeremy Bentham*, 11 Vols., London, 1843, Vol. 4, p. 40.

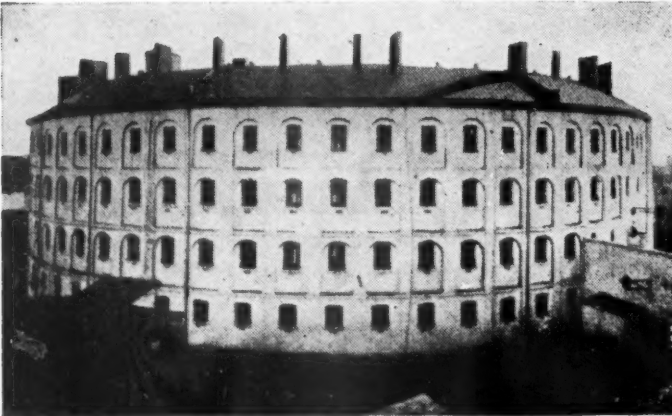
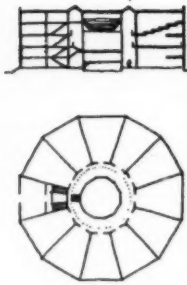
<sup>15</sup> Jeremy Bentham, *Panopticon; Or the Inspection House*, London, 1791. Another edition appeared in Dublin in the same year.

<sup>16</sup> Jeremy Bentham, *Panopticon; Postscript*, 2 Vols., London, 1791.





15, plan, section and elevation for 12-sided Panopticon poor-house.



16. State Prison at Richmond, Virginia, by Latrobe

beams were erected.<sup>17</sup> But in the Panopticon we have, nevertheless, the first English document in which the large-scale and systematic use of iron is proposed. The main columns, supporting the roof and the galleries, were to be of hollow iron; so were the whole of the inspection tower, the inside wall of the cells, the gallery rail and floors, window frames, skylights and staircases, as well as a number of smaller items. The floors were to be 'fire-proof,' similar to those in the contemporary mills, consisting of brick and 'plaster' arches spanning between the cell division walls.<sup>18</sup> Some of the hollow iron columns, the only precedent for which Bentham had seen were at a London riding school, were to be used as rainwater pipes and as flues from the basement furnaces, '... articles for which it might otherwise be not altogether easy in a building of so peculiar a construction to find a convenient place.' Within a few years this kind of combination between structure and services was to become an important field for building pioneers; one of the earliest cases occurred in the famous Philips and Lee (Salford) mill (1801), where the columns also acted as vertical pipes for the steam heating system.<sup>19</sup> A similar patent was taken out, apparently independently, by Neil Snodgrass in 1806;<sup>20</sup> but Bentham's suggestion was unique

<sup>17</sup> Turpin Bannister, *The First Iron-Framed Buildings*, ARCHITECTURAL REVIEW, Vol. 107, No. 640, April, 1950, pp. 231-246.

<sup>18</sup> Two additional, alternative, systems were proposed: Stanhope's floor, consisting of a patent method of plaster infilling between timber joists, and a system of '... stopping the draught of air by iron plates, upon Mr. Hartley's plan.' The first was patented by Viscount Mahon, later Lord Stanhope, in 1778. The second, in which iron plates were fixed to the top and bottom edges of the joists, under partitions, etc., was patented in 1775.

<sup>19</sup> This mill, the fourth to have cast-iron beams and columns (see Bannister, op. cit.), is often illustrated for its structural novelty. On these illustrations the horizontal connecting pipe between the columns can be quite clearly seen (e.g., Siegfried Gledion, *Space, Time and Architecture*, Cambridge (U.S.A.) and London, 1947, fig. 65, p. 127).

<sup>20</sup> *Transactions of the Society of Arts*, Vol. XXXIV, 1806, p. 118, and illustrations.

at the time.

The source of his ideas on construction was, again, probably Russia. He must certainly have seen Orlov's Marble Palace in St. Petersburg, designed by Antonio Tinaldi and built in 1768-72, where the copper roof was supported on iron rafters.<sup>21</sup> Iron production and mining were very advanced in Russia at this time; it is known, for instance, that the use of iron (both cast and wrought) for roofing slates was accepted practice.<sup>22</sup> The material played a large part in the arsenals and Samuel must have used it extensively at Kritchew.

Amongst the technical proposals for the Panopticon were: individual sanitation for each cell; heating and ventilation by a combined plant, with provision made to distribute the air by means of wall and floor ducts, passing it over blocks of ice in the summer;<sup>23</sup> a remote control sun blind to cover the 'annular well' (the circular space between the inspection tower and the cells); a circular water tank in the roof, which was also to act as an automatic fire-extinguishing system; and sliding metal partitions in the inspection tower.

The Bentham brothers made designs for Panopticons of all sorts; Jeremy seems to have been the designer, while Samuel acted more in the capacity of draughtsman. One design, prepared in 1797, was for housing 10,000 prisoners-of-war! In 1805, Alexander I of Russia became interested in the scheme and commissioned Samuel to design a school of arts and crafts at Ochta, near

<sup>21</sup> For descriptive sources of this and other Russian iron constructions of the time see Bannister, op. cit., pp. 232-33.

<sup>22</sup> *Procès Verbaux de l'Académie Royale d'Architecture* (ed. Lemonier), March 19 and 27, 1759. I am indebted to Mr. Peter Collins, of the University of Manchester, for this reference. Howard, op. cit. Note 1, 1784, ed., p. 88, mentions the use of 'thin iron plates' as a roof covering on the St. Petersburg House of Correction in 1784.

<sup>23</sup> Bentham had already thought of central heating by means of steam as far back as 1778. See *A View of the Hard Labour Bill*, London, 1778, in Bowring, op. cit., Vol. 4, p. 23.

St. Petersburg.<sup>24</sup> There was a central drum of over 100 feet diameter and five radiating arms, each 100 feet long. The structure was entirely built of timber and was burnt to the ground some ten years later. Arthur Young's *Annals of Agriculture* (1797) included Jeremy's idea for a twelve-sided Panopticon poor-house, but the design was not published till 1812, 15. The drawings, by Samuel Bentham and Samuel Bunce show a striking building with an almost completely glazed exterior, probably intended to be executed in iron.

The only two prisons ever built on a plan resembling that of the Panopticon were in America. The first was B. H. Latrobe's State Prison for Virginia at Richmond designed in 1797 and built in the next few years. The cells here were arranged in a semi-circle with the main entrance on the diameter, 16. The idea for this plan was Thomas Jefferson's, who, in 1786, while ambassador to France, sent the outline of his proposal to Virginia. Apparently he had been inspired by the great centric plan for an ideal prison produced by the Lyons architect Pierre-Gabriel Bugniet in 1765.<sup>25</sup> It is probable, too, that Jefferson had seen some of the circular plans, for various buildings, which were so favoured by the Revolutionary architects. Upon the publication of Bentham's scheme the Academy designs for penal buildings became strongly influenced by his ideas; Bellet's scheme for a prison, 17, produced only a year later, in 1792, was typical of these plans. Superficially Latrobe's scheme was similar to Harrison's Chester Castle, in England; but the latter design, although often erroneously stated to have been the first based on the Panopticon, was actually prepared three years before the publication of Bentham's work. Harrison did not concern himself with the same kind of functional problems as those which engaged Bentham's, and, to a lesser degree, Latrobe's, mind.

The other American example was the first Western Penitentiary at Pittsburgh, designed for Pennsylvania State in 1818 by William Strickland. The prison was built between 1820 and 1826. The plan in this case, 18, followed the Panopticon far more closely and, in so doing, gave the final proof of the impracticability of carrying out Bentham's idea in its original form. Within a few years it was found quite impossible to run the prison efficiently; it was pulled down and replaced by a new structure, within the existing boundary walls, in 1836.

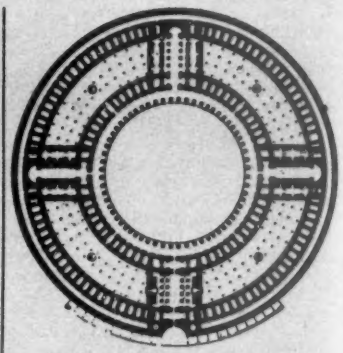
As for England, the Bentham brothers did succeed, in 1794, in persuading the Government to erect the national penitentiary on the Panopticon plan; but, after seventeen years of discussion, heated public debate, various dubious site deals and official investigation, the scheme was finally dropped in 1811.<sup>26</sup> Three years later Jeremy was paid £23,000 official compensation; he was convinced that it had been George III's personal dislike of him which had caused the abandonment of the plan.

The Millbank site which the Government had purchased was now given over to a new scheme, a great penitentiary for the design of which Harvey (or Hervey), assisted by Busby and Williams, won a competition in 1812. Building commenced

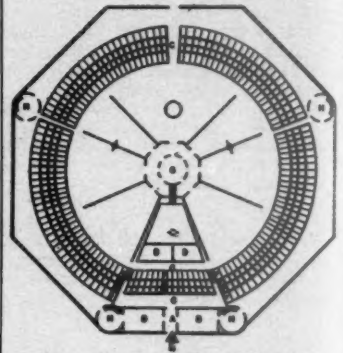
<sup>24</sup> *Dict. A.P.S.*, s.v. 'Panopticon.'

<sup>25</sup> The full history (and an illustration of Bugniet's plan) is given by C. E. Peterson (Editor) and H. C. Rice in *Early Prisons*, pp. 26-30, *Journal of the Society of Architectural Historians*, Vol. XII, No. 4, December, 1953.

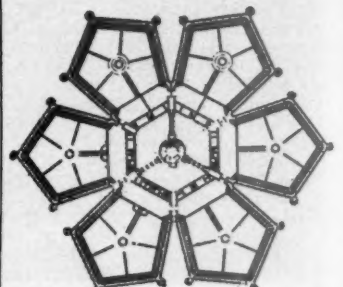
<sup>26</sup> Bowring, op. cit., Vol. 11, gives the full correspondence. See also *D.N.B.*, s.v. 'Bentham, Jeremy.'



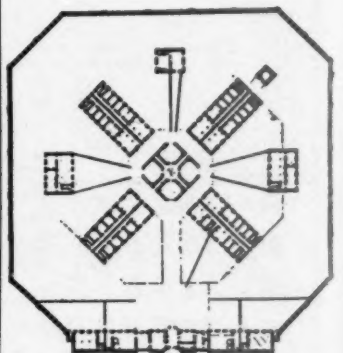
17, Bellet's prison plan of 1792.



18, First Western Penitentiary, Pittsburgh, 1826.



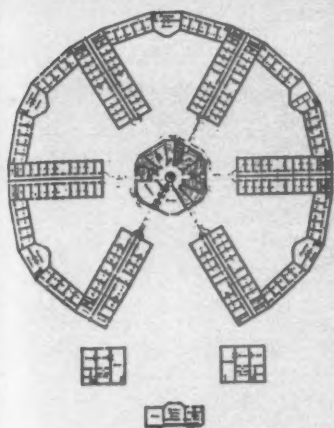
19, Millbank Penitentiary.



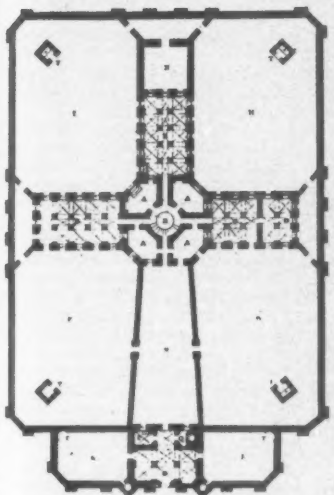
20, Bury St. Edmunds Gaol.

almost immediately, but the final portion was not completed till 1821.<sup>27</sup> The plan, 19, consisted of a central hexagonal court, surrounded by administrative buildings, with pentagonal courts on each of its six sides. The cells were arranged round these six pentagons. The geometric

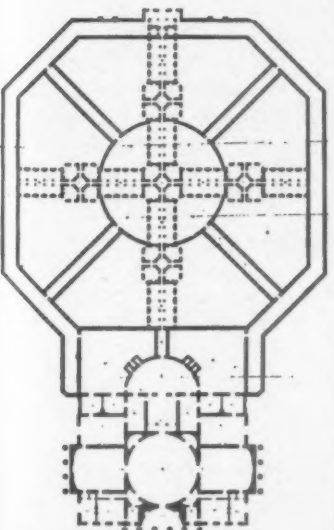
<sup>27</sup> George Holford, *An Account of the General Penitentiary at Millbank*, London 1828.



21, First floor plan of Orridge's Model Prison.



22, Cavan County Gaol.



23, Elsam's Model Gaol.

centre for the whole scheme was the prison chapel. In the centre of each pentagon there was an inspection tower which overlooked the cells and five interior exercise yards. The cells faced inwards, with an external corridor linking them for greater security. Although none of the Panopticon's advantages were gained (a point emphatically and abusively driven home by Bentham in his correspondence!) its influence can be clearly seen at work. There were single cells for 1,100 prisoners; it was the largest English building of its kind and it stood until 1903, when it was pulled down to make way for the Tate Gallery. The massive structure, with small windows and circular angle turrets, impressed many nineteenth century travellers and writers; its resemblance to a medieval castle struck them forcibly—it was a point praised by some and condemned by others.<sup>20</sup> But the plan, less attractive to the Romantic mind, was certainly majestic and could be considered a true successor to the medieval fortified town.

Although the Panopticon had been rejected in England, there can be no doubt that it was Bentham's influence which turned designers' minds towards the centric, geometric plan as a practical solution for prison design towards the end of the century. The radial prisons built before the publication of the *Panopticon*, Ipswich, Salford and the others, were now recognised and the plan was adopted almost universally. Several designs were put forward before 1800, but the next important scheme to be executed was not till 1803, when Bury St. Edmunds Gaol was built.<sup>21</sup> Its designer was John Orridge, the Governor. The typical centre piece, repeated in so many later examples, can already be seen here in its fully developed form, 20. Orridge was also the designer of a model prison for the Russian Emperor (1819), in which there were six radiating wings and a central chapel, 21; there were, in addition, cells along the circumference, giving the building a polygonal outline. Other early nineteenth century examples were built at Cavan, designed by Elsam (1810), 22, and at Spilsby, where the Prison and Sessional House was designed by H. E. Kendall (1824). Elsam was also the designer for one of the largest schemes ever devised on this plan, a model gaol (1834), 23. Great publicity was given to the idea by the Society for the Improvement of Prison Discipline and for the Reformation of Juvenile Offenders, which published four similar designs in 1820 for prisons varying in size;<sup>22</sup> the smallest had accommodation for 28 prisoners, 24, and the largest for 400, 25.

It is interesting to note that in none of these early radial plans was the idea of 'inspection', in Bentham's sense of the word, fully achieved—for several reasons. First, the cell blocks were several storeys high and, at best, inspection was only possible from one point on each floor. Second, the two sides of each radiating wing were often divided centrally by a solid wall which interfered with the line of vision. Third, the cells were sometimes only connected on the ground floor to the central building;

at Dartmoor Prison, designed originally to house French prisoners-of-war by D. Asher Alexander and Thomas Tyrwhitt (1805-09), 26, the blocks were actually completely detached, yet arranged on the site in a radial pattern.

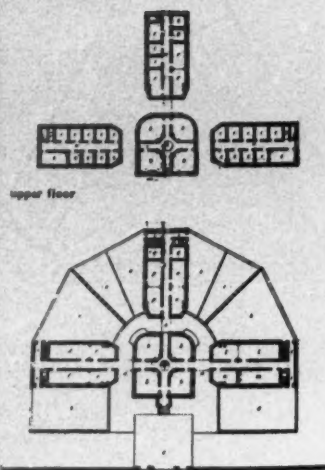
Following Soane's early lead, geometric systems of a non-radial type continued to be invented. One of the most interesting of these was James Elmes's, put forward in 1817.<sup>23</sup> Here the inspection towers were at the corners of triangles; the chapel, once again, was at the centre of the plan, 27 and 28. It is probable that Elmes, who, as will be seen later, had indirect contacts with Russia, was inspired by the House of Correction at St. Petersburg (1784), 29, which had a plan based on the same principle, if less regular.

Meanwhile new and important developments were taking place in America. Under Howard's and the Quakers' influence great advances in prison reform took place after 1780. The full, complex story of State enactments and experiments does not concern us here;<sup>24</sup> but it must be noted that the net result of them all was the development of two schools of reformers. The first, centred in Pennsylvania, advocated the 'separate' system of confinement,<sup>25</sup> where prisoners were kept in separate cells day and night, the second proposed the 'Auburn' system, where solitary confinement was only for sleeping, while communal work was carried on during the day. The first Pennsylvanian 'separate' prison was the Western Penitentiary, Pittsburgh. One of the designs rejected in favour of Strickland's Panopticon was by a young Philadelphia architect, John Haviland. In 1821 he was more successful, and he won the competition for the new Eastern Penitentiary to be erected at Cherry Hill, Philadelphia. His design was based on the radial pattern, but there was a difference. In the Eastern

<sup>21</sup> James Elmes, *Hints for the Improvement of Prisons*, London, 1817. Elmes notes (p. 7) that up to that time no practical architectural solutions to Howard's proposals had been found. He evidently did not approve of the radial plan.

<sup>22</sup> Max Grunhut, in *Penal Reform*, Oxford, 1948, gives numerous excellent references.

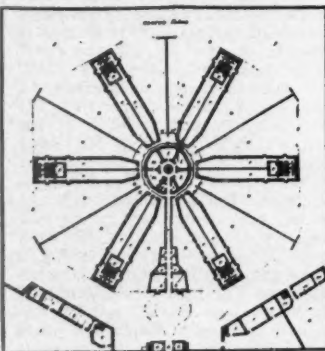
<sup>23</sup> Dostoevsky, in spite of the terrible conditions of the Siberian 'common' prison in which he spent ten years, had some hard things to say about 'separate' confinement: '... I am convinced that the celebrated cellular system gives results which are specious and deceitful. It deprives a criminal of his force, of his energy, enervates his soul by weakening and frightening it, and at last exhibits a dried up mummy as a model of repentance and amendment.' (*House of the Dead*, Everyman ed., London, 1944, p. 17).



24, ground floor

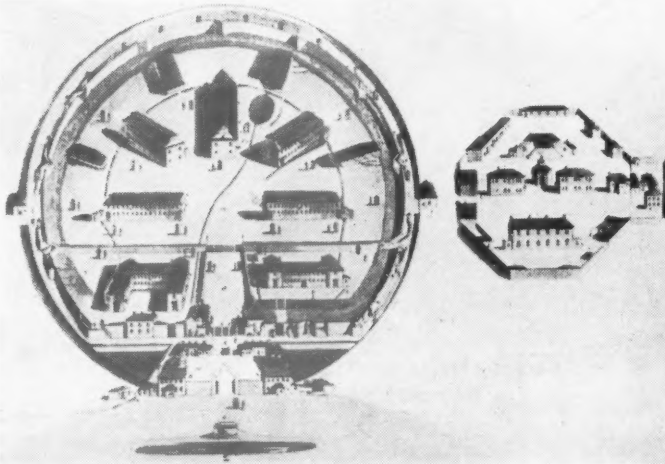


25, upper floor



26, ground floor

Designs by the Society for the Improvement of Prison Discipline, 1820; 24, for 28 prisoners, and 25, for 400 prisoners.



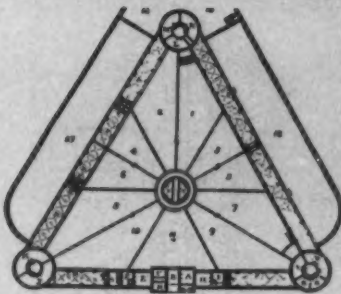
26, Dartmoor, 1806-9.

<sup>24</sup> E. G. H. Mayhew, in *The Great World of London*, London, 1856, p. 234: '... There is a systematic irregularity about the in-and-out aspect of the building which gives it the appearance of a gigantic puzzle; and altogether Millbank prison may be said to be one of the most successful realisations, on a large scale, of the ugly in architecture, being an ungainly combination of the madhouse with the fortress style of building.'

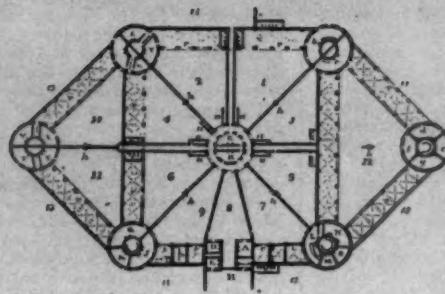
<sup>25</sup> John Orridge, *Description of the Gaol at Bury St. Edmunds*, London, 1819.

<sup>26</sup> Rules, etc., of the Society, London, 1820.



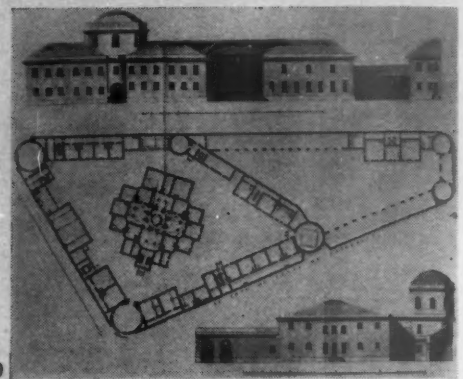


27



28

27 and 28, alternative plans proposed by James Elmes in *Hints for the Improvement of Prisons*, 1817. 29, right, the House of Correction, St. Petersburg.



29

Penitentiary (1821-29), 30, which was originally only one-storey high, the cells were so arranged, for the first time, that from one central point each of the 252 cells could be seen. This was the radial plan carried to its logical conclusion. Long before it was completed its fame had reached Europe.

John Haviland<sup>24</sup> was born in Somerset in 1792. For a number of years he worked, as a young man, in the London office of James Elmes. Here he became familiar with some of Elmes's early experiments in prison planning as well as other current English work on the subject. In 1816, just before finally emigrating to America, Haviland went to St. Petersburg to pay a visit to his mother's sister, married to Count Mordvinoff. While there he would be open to all the Russo-English influences: the school of crafts at Ocha, the Bentham's Panopticon work, published designs of such English prisons as Bury and Orridge's model gaol and the work of Russian designers. The Eastern Penitentiary, his first large scheme, was an immediate success. Within a few years he was asked to design, on the same plan, other large prisons; Trenton Prison, for New Jersey State, was the next (1833) and amongst his later designs were the prisons or

penitentiaries for Missouri, Rhode Island, Allegheny, Dauphin and Lancaster, as well as the New York Halls of Justice and City Prison and the second Western Penitentiary at Pittsburgh. His buildings were visited and studied by European reformers. The first complete report of his system was made by the Frenchmen G. de Beaumont and A. de Tocqueville.<sup>25</sup>

It is curious that, while in England prisons may have accidentally resembled castles, in America this was, from Haviland's period of activity onwards, a conscious aim. 'This Penitentiary (Cherry Hill) is the only edifice in this country which is calculated to convey to our citizens the external appearance of those magnificent and picturesque castles of the middle ages, which contribute so eminently to embellish the scenery of Europe.'<sup>26</sup>

England did not have such a fully developed radial plan till 1840, when Pentonville Prison was built; it was the first in Europe.<sup>27</sup> There were four

three-storey cell wings, radiating at 60° to each other, with a total of 520 cells, 31. For half a century this plan was used in England and Europe almost exclusively. Once the height had increased beyond the single storey, it was necessary to have a central 'hall' between the tiers of cells on either side; this gave the cell blocks the characteristic section, not substantially different from that of the San Michele prison built almost 150 years earlier. Wakefield, with 782 cells, was the largest English prison of this type; others were built at Leeds (1843), Kirkdale (1845) and Manchester (1866-68). By 1847 there were 51 prisons built or under construction on the Pentonville plan.

The only other plan used in England and America was the 'pavilion' type where there were long narrow blocks, placed end to end or parallel. The development of this type is a separate story. But the centric idea was often present here, even if only in the planning of individual buildings. James Savage's design for a prison chapel (1835), 32, for instance, still owed a lot to Benthamite notions.

Although the early radial plans may have had superficial resemblances to the Greek cross and similar plans which had been traditional in European institutional buildings,<sup>28</sup>

they represent a fundamental change. Whereas inmates had previously looked into the centre, towards the chapel, they were now, in addition, observed from the centre. Gradually the second function replaced the first; this can be clearly seen by comparing the relative position of the chapel in Bentham's or Orridge's plans with that in Pentonville. Was the spirit behind the radial prison that of the French rationalist architects of the Revolution and of the Prix de Rome competitors? Or was it, with its emphasis on the enforcement of the circle, a continuation of a humanist approach to design? The fact that few of the early designers were architects makes it even more difficult to answer these questions. But there is no doubt that the real significance of prison design in the late eighteenth and throughout the nineteenth centuries is that it preserved the tradition of planning in the grand manner by combining completely functional with strictly formal solutions. It is ironic that, in addition, the façades of prisons should have satisfied the romantic longing for the picturesque and the baronial.

The strictly formal geometrical patterns of the plans of the late eighteenth century and early nineteenth century Rome prizes lived on in prison plans which were at the same time completely functional.

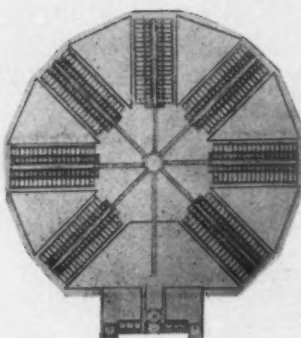
<sup>24</sup> Dictionary of American Biography, Vol. 3, pp. 412-13, s.v. 'Haviland, John'; in *The Builder*, May 29, 1852, a full list of his works appears. See also obituary in *Pennsylvania Journal of Prison Discipline*, July, 1852.

<sup>25</sup> G. de Beaumont and A. de Tocqueville, *Des Systèmes Penitentiaires aux Etats Unis*, Paris, 1833. More inclusive reports, of both 'separate' and 'Auburn' penitentiaries, were made by William Crawford in *The Penitentiaries of the United States*, London, 1835, and by M. Demetz and G. A. Blouet in *Rapports, etc., sur les Penitenciers des Etats Unis*, Paris, 1837.

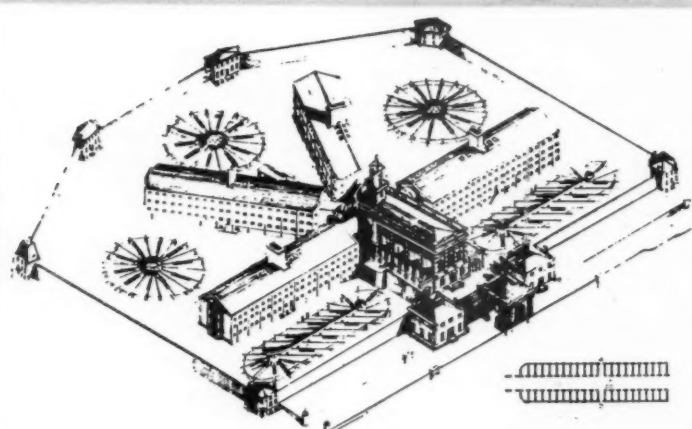
<sup>26</sup> G. de Beaumont and A. de Tocqueville, op. cit., note, p. 121, quoted in English from *Description of the Eastern Penitentiary*.

<sup>27</sup> Report of the Surveyor General of Prisons on the Construction, Ventilation and Details of Pentonville Prison, London, 1844.

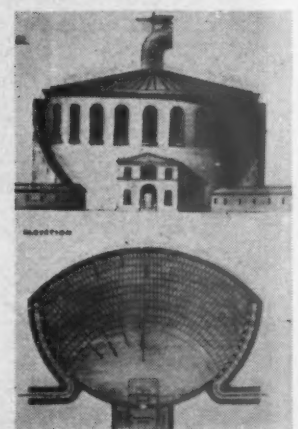
<sup>28</sup> See illustrations, for instance, in J. N. L. Durand, *Recueil et Parallèle des Edifices de tout Genre, Anciens et Modernes*, Paris, 1800-01, esp. Plate 28 and 29.



30, Eastern Penitentiary, Philadelphia, 1821-9.



31, Pentonville, 1840.



32, Savage's Prison Chapel design, 1835.



# current architecture recent buildings of interest briefly illustrated

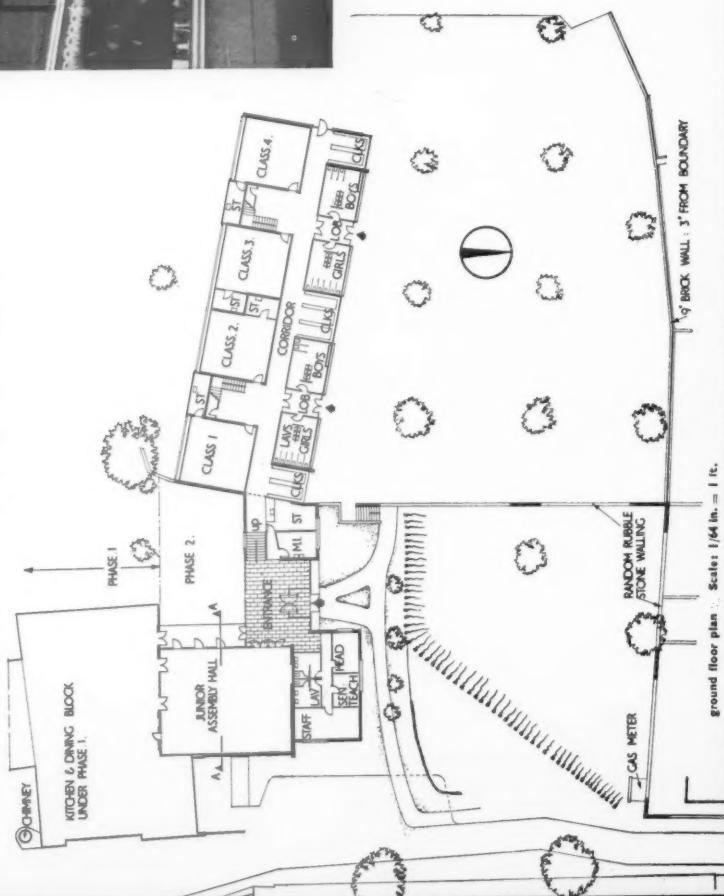
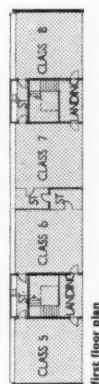
## JUNIOR SCHOOL AT OLDBURY, WORCS.

ARCHITECTS: YORKE, ROSENBERG and MARDALL  
ASSISTANT-IN-CHARGE: J. G. FRYMAN

This is the second half of the County Primary School whose Infants' department was illustrated in the review for November, 1953. The kitchen and dining block, which was built in the first phase, will serve the whole school and is joined to both departments. The site contained a medley of Black Country industrial leavings—two disused mine shafts and a marl-pit—and was partly covered by 7 ft. of spoil from an old brickyard. The classroom wing was built on the only part of the site that would take its load: it contains eight classrooms, each with a workroom store adjoining. There is also an assembly hall, and accommodation for a staff of ten. Ordinary r.c. footings and slabs were used for foundations; the classroom wing has light steel columns and beams with precast concrete cladding; the assembly hall light steel frame to an 8 feet 3 inch grid, and the administration block load bearing brickwork and a r.c. roof.



1, above, the south side of the classroom block looking to the dining hall and chimney built in the first phase of the school. The projecting stores are timber framed, faced with vertical hardwood boarding and linked by timber slatted sun breakers.  
2, right, main entrance doors.





next door). 9, York House, on the other hand, has a fine position in Westminster Bridge Road, where the lettering shows to great advantage. It is more successful, perhaps, as architectural decoration than as letter-design, but is gay and lively. A similar but rather more elaborate letter can be seen in Elliot Street, Liverpool, and has the interest of being dated 1846. All these were, presumably, designed with the buildings they decorate and are of the same material.

Also Regency in spirit, though no doubt their manufacture continued long into the Victorian period, are the imitation white marble letters of which a number of examples survive. I have seen them in Bath and Ambleside, and Keswick and a blue one at Temple Cloud, Somerset. The one reproduced, 10, is from Sherborne. They are made of porcelain and were formed as Egyptians\* as well as Tuscan, though the latter are certainly more of a creation. In metal the opportunities of curls and foliage are obviously very great. 11, 12, 13 are rich examples from Dublin. One may note the addition of some sort of feature in the middle of the letter stem, which is a normal characteristic of the mid-Victorian Tuscan.

An extension of this idea is that according to which the refined upper half of the letter rises like a flower or phoenix out of the foliage or flames of its lower part. Hotel, 14, is a dignified applied gilt example from Leeuwarden, Holland. In a more flamboyant manner Mulhollands, 15, is a good example of painted Dublin letters. The letter shapes are rather coarse, but there is rich pattern in the imitation relief, redoubled by the enormous shadows. I like, too, the sophistication of painting for a fascia board letters as if seen from above. Glass is also a particularly good medium for the Tuscan, which lends itself to the double, oblique stroke of glass engraving, 16, and to rich gilding. In wood, Haddow, 17, from Brighton shows what rich decoration can be made with Tuscan as the focus, while Pharmacie, 18, a very typical French applied letter, of a pattern which one sees in many parts of the country, shows how the Tuscan curves re-echo those of the balcony above to make a charming combination.

In all these there is considerable range of mood from blousy and strident to the magnificent and the gay. The later nineteenth century introduced, however, a note of which one would hardly have thought the letter capable, that of refinement; thin letters, no longer decorated in the body, like Gillard, 19, of Bath. 20 shows an elegant modern Italian letter, seen in Venice.

Is it possible, after all this, to answer our

\* An example is reproduced AR, June, 1954.



first question: is it a perversion to decorate letter-forms? I would answer that such a question can only be answered *a priori* by the strict classicist who wishes to reduce everything to a unity and a single perfection. The photographs here reproduced show a diversity not only of form and material but of purpose and idea. Judged each from its own point of view, and not from a fixed viewpoint, each has its character and its charm. My intention is to collect and present material, to explore all the different sorts of usage, expression, pattern which men of invention and sensibility have contrived out of letters. Maybe we shall find that they have a far greater range of use than we expected, that what seemed a perversion was only an unfamiliar idea.

Nicolette Gray

## EXHIBITIONS

### PAINTING AND SCULPTURE

*Even when the money is available, it is no longer possible to make a representative collection of European paintings by the acknowledged masters, and the São Paulo Museum, founded only seven years ago, has no hope of providing its citizens with a balanced view of the history of European painting. A miscellany of lovely pictures would be the next best thing, but the Museum's rich donors have a preference for the French masters of the second half of the nineteenth century, and seem to*



1

*attach more importance to large works of this period, however ugly they may be, than to fine unassuming examples of less fashionable periods. The*



2

exhibition of seventy-nine of São Paulo's 'masterpieces' at the Tate Gallery included eight paintings by Renoir, five by Cézanne, four by Manet and four by Toulouse-



3

Lautrec, but although some of them are very ambitious works they look tentative or laboured or comically solemn beside Clouet's 'Bath of Diana' and Goya's portrait of Ferdinand VII.

The best of the paintings by Cézanne, a portrait of his wife, 1, is clearly a masterpiece, but compared with the even more lightly painted Goya it is unfinished and still involved in studio problems. I am sure Cézanne was still worrying and fretting about the arbitrary line round the face when he put the painting aside. It is a

work neurotically in progress. The early Renoir nude is a *tour de force*, but not, I think, a great painting, 2. The Courbetesque figure has never worn the dazzling heap of Renoir clothing, and does not inhabit the scene. In spirit, she remains on the model's platform, a little undecided as to whether she is just herself or Venus or a study in weights and measures. It is not surprising that Manet's portrait of Pertuiset, the lion hunter, 3, gained him a medal when it was exhibited at the Salon. It is a notable example of artificial realism, as convincing as a cabinet photograph, and although done, I fancy, in deadly earnest, a superbly comic study of placid heroics. With Ingres' 'Angelica Chained to the Rocks,' which perfects the debasement of the idealized nude, it will give Brazilians more useful material for the study of Victorian values than anything Queen Victoria's subjects could have provided.



4

The Director of the São Paulo Museum wrote a fascinating article on its activities for the Tate catalogue. It must be the most ambitious forcing-house for culture on the American continent; it combines the functions of the National Gallery, the Arts Council, the Institute of Contemporary Arts and the Royal College of Art, and may well create a smoothly cultured, right-thinking populace in record time.

The paving of the garden at 4, St. James's Square has just been completed, and the Arts Council has been able to celebrate the occasion by showing part of its exhibition of sculpture by Gerhard Marcks in the open, 4. This eighteenth-century architectural setting is perfect for bronze effigies, but would deal pretty harshly with any kind of formalistic pretentiousness. The sculpture of Marcks, with its alert sobriety and quiet humour, survives the test extremely well, but he is at his best when his work is well under life-size; the largest figure in the exhibition, the seven-foot high 'Gisela' is too strenuously monumental, and suggests that his public statuary does not avoid pomposity.

Marcks is Germany's most notable living sculptor, and although he avoids the excesses of expressionism he is thoroughly Northern in spirit. His delightful bronze of

Venus showing Cupid how to aim his darts turns the Goddess of Love into a blend of young mother and school-marm, and his quite wonderful study of a young child

painting in London. This is the most curious school that has arisen inside the modern movement for several years. It has become fashionable and continues to gain

artist's place in society. Princess Zeid's work is still a little impure in that it contains faint traces of preconception, which spring from the thinking mind and the seeing eye. But no doubt they will be eradicated, and in due course her work should help to bring the modern movement to a close.

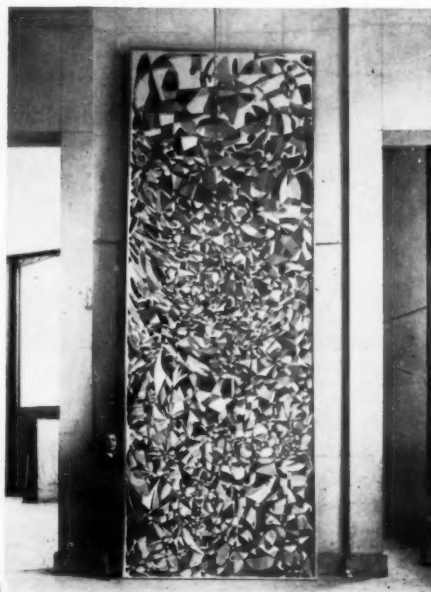
Robert Melville



confiding in her grandmother has a warmth of a kind which rarely finds its way into contemporary art. His small bronze of a cossack vaulting a horse lacks the dynamism of Marini's horse-and-rider sculpture, but when he is not trying to convey the sense of movement his horses, bulls and cocks have a lively stillness. 'Cock in the Rain,' 5, exemplifies his sympathetic and humorous observation. His studies of the female nude do not compare with those of Marini and Manzu, whose figures wear their nakedness with incomparable aplomb, but his draped studies of young girls are full of psychological insight and the disquiet of the senses. He is one of the few sculptors of our time who can make a seemly human effigy. It is surprising that no dealer has thought of bringing this distinguished work to London, and the Arts Council is to be congratulated on once more being ahead of private enterprise.

Fahr-el-Nissa Zeid, who has been showing some very large and brightly coloured paintings at the I.C.A. Gallery, 6, practises a kind of automatism that is called lyrical abstraction in Paris, abstract expressionism in New York and action

adherents. It is play-therapy taken to inordinate lengths. As communication it is non-existent and as wall-texture it is distracting and overbearing; and there is nothing to discuss apart from its relevance or irrelevance to such matters as the



## TOWNSCAPE

### THE BONNE BOUCHE

*The architecture of most buildings—of all except the great masterpieces, perhaps—leaves room for the exercise of the creative urge of their occupiers, which is another way of saying that where architecture stops, popular art takes over. Sometimes it sets out to produce a special treat for the devouring eye in the form of a bonne bouche. These three photographs show as many attempts at mounting a bonne bouche in a single town (Devizes). At*



the Dolphin it has been a pretty half-hearted attempt; the eye can swallow those two boards at a glance and pass on without feeling that it has been treated to anything special at all. At the Crown we are beginning to get somewhere; but the final result is still not satisfactory. This is partly because some of the ingredients are poor in themselves, even more because of the



studied symmetry of the whole affair; its whole purpose being to bring one immediately to the point, symmetry offers no inducement for the eye to linger. At the Bear, however, we have arrived. The ingredients, though not numerous, have



been well chosen and mixed in such a way as to provide a rich and intricate, and therefore satisfying, eyeful. Such richness and intricacy are qualities of every good *bonne bouche*.

Marcus Whiffen

## CRITICISM

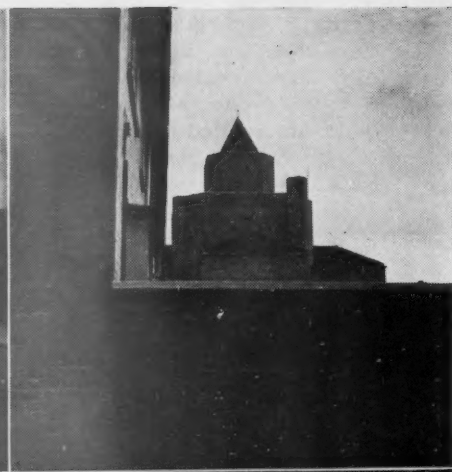
### LANSBURY CENTREPIECE

*Because most of today's bad architecture is negative it is extraordinarily difficult to show up in precise terms.* The free standing crashing bathos that can be shown to be so is rare, so it is all the more surprising to find it in the middle of Lansbury.

There, Adrian Scott's new Catholic church is now complete, on a site which is roughly in the centre of Lansbury as a neighbourhood—north of the Congregational church at the junction of Grundy Street and Canton Street—so that it dominates most of the streets and also the view from Commercial Road that is the passer-by's recognizance of Lansbury. With what effect can be seen in the photographs: it squats gracelessly at the end of a street, 1, or peeps queasily over a wall, 2; it dominates without uplifting close to, 3, and is terrifyingly inert under the eaves, 4.

One owes it to the building to elaborate what is really self-evident in the photographs: having attempted to make an example of it, it is only fair to try to give explicit reasons.

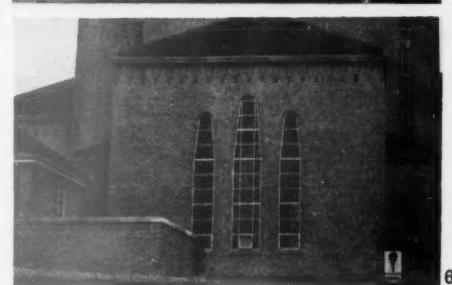
The one overwhelming fact about it is the sprawling lumpish mass; why produce such a rigid and grandiose central plan, and why, having produced it, build it up so weakly and in so many shallow stages that it can do nothing else but sprawl? Why, having got this silhouette, apply timid



brick fluting to it which blurs what few acceptable volume relations remain? Why, having used an Egyptian arch for the portal, 5, neither dispense with it nor carry it through, but evolve a bastard shape for the windows that is quite formless, 6? Why use pantiles when every other building in Lansbury has tried to recapture the East End crispness in slate—and why having used them, make a half concession to the *genius loci* and use pale pink bricks that are almost—but disastrously not quite—the colour of the stockbrick used for the houses?

Two interesting things do after all emerge from this catalogue; one is that most of the criticism would stand whether or not one was adopting a modern attitude: as one Byzantine Revivalist to another, so to speak, it is still a bad building. The other is that when each fault is expressed as an adjective, the result is a set of contradictions; here is a building that is both aggressive and flaccid, vulgar and genteel, pretentious and timid. One set is positive, the other negative, as if the design had been modified between idea and reality by a set of genteel drawings-back as attempted concessions to the site. So, after all, it is conformist architecture, like the proposed blocks around St. Paul's, though in this case conforming has not inhibited a modern

design but squared the original ugliness. Had it been built 80 years ago there would have been no thought of conformity, the result would have been as insensitive but in a positive way, like Waterhouse's Kings



Weighhouse church in Mayfair.

There is finally the paradox that a 'traditional' architect has built something utterly at variance with the traditional pattern of the neighbourhood by building

in a traditional way, whilst a number of 'modern' architects have maintained the pattern by using a contemporary style sensitively. In this case, the contrast is aggravated by the fact that the traditional style chosen has been misplaced by something like the width of a continent, but the point is the same: that the *genius loci* stands the best chance of survival at the hands of a modern architect, who will regard it as an integral part of the problem posed by the site, and not something which can be solved by the application of this or that style.

The cruel thing is that this should happen in the middle of Lansbury, for this is the one neighbourhood where a genuine attempt has been made to reinterpret the old pattern and not superimpose a new one. It is not entirely successful—few first attempts are—but it is a brave try, and did not deserve this *coup de grace*. What the photographs show, incidentally, is that the faults so evident when the buildings were new are disappearing under the grime, and that it is used and accepted as part of the East End.

Ian Wain

## BOOKS

### SOVIET PLANNING

CITY PLANNING IN SOVIET RUSSIA. Maurice F. Parkins. 257 pp. University of Chicago Press. (Cambridge University Press. Price 45s.)

One knows that the Russians have carried out vast schemes of regional development and town building, but one wants to know about individual schemes in the round and above all why some failed and others succeeded. Sporadic dollops of facts, usually poorly translated into terms of targets missed and gained, bemuse the most eager student. We are all liable to suffer from our friends and Press agents: planning news from Russia is almost killed by them.

A book about Russian planning is therefore sure of a welcome, and its author of a charitable reception. Mr. Parkins was born in Russia and, as he says, 'uses the Russian language.' He appears to have been through all the information on Russian planning available in the USA and has recorded much of it in an annotated bibliography of 100 pages—nearly half the book. This is most valuable and not only for students of planning. It includes basic reference works on geography, economics, agriculture and political directives as well as housing, transport and other matters.

In the first half of the book the author draws heavily on the charity kept ready for him. There are no photographs and sixteen out of the nineteen drawings vary between very poor and awful. Most people who use English also use acres and square feet. Mr. Parkins recalls this intermittently; for the most part we have to goggle at hectares and metres. And having warned us how necessary

it is to distinguish between the ideological and technical aspects of Russian planning, Mr. Parkins seems to become less and less able to do so himself. For example on p. 51 *et seq.* he sets down 10 'basic principles' of Soviet planning, brimful of jargon and meaningful or meaningless as you will. He says that these principles 'provide for the Soviets a compact working guide to action. In contrast, in the United States: [here he quotes Frederick J. Adams] "A number of so-called principles . . . are too often expressed in such broad terms that their validity in a specific case depends almost entirely on the imagination and sound judgment of the person applying them. . . ."'

Having set down these things, and restrained oneself from saying a lot more, one still admires Mr. Parkins's book. It enables one to realize the problems the Russians have had to solve: the development of industry and new towns on a huge scale while the rural population, defying all decrees, continued to flood into existing towns (urban population doubled between 1926 and 1939); the mixture of idealism, over-complex administration, courage and brute force which the Soviets brought to bear; and the terrible set-back of wartime destruction. One ends by hoping, more than ever, that reports on particular projects will in time become available, without propaganda.

H. Myles Wright

### THREE-HUNDRED SITTINGS

CHAIRS. Interiors Library No. 2. Edited by George Nelson. Whitney Publications Inc. Price \$10.

Over 300 chairs by nearly 100 designers.

There is a temptation, at first glance, to sympathize with the lady on page 56 who, sympathized by chairs, is so bewildered that she elects to sit on the floor. More careful scrutiny reveals the book as a valuable record of the state of industrial design in the 'fifties. The completeness of the record is based on three facts: the bold catholicity of the Editor's selection of work; the fact that the majority of plastic designers, at some time in their lives, attempt the designing of a chair and the fact that, in spite of numerous authoritative opinions, there is no universally accepted dicta about the form which chairs should take for maximum comfort.

The design problem is a nice one. A chair stands freely in space to be seen from every angle, it must be related intimately to the human form, its structure must satisfy the most exacting tests and its visual pleasures must be controlled to the mood and function of its setting. It is the perfect microcosm of the plastic designer's task. Though there is design data aplenty, and though the human form is so flexible that it is possible to sit on almost anything with a reasonable degree of comfort, there are no simple certainties on which the designer can rely. He sits in his prototype, some part of the chair imposes itself harshly, data are forgotten and the designer begins his work.

The Interiors Library volume on *Chairs* covers the work of the first half of the twentieth century. The early work of men now respectably mature reveals an integrity and

clarity of thinking quite startling amongst the eclecticism of the 'fifties; so little time from then, when the adventure of designing was a search for the rational, to now when the designer, nurtured in simplicity, strives towards the delights beyond, not knowing quite in which direction they lie.

This book may suggest the answer, though it will take time. If those chairs are gradually eliminated which it is clear were of only passing interest, there will remain, in the fullness of time, two or three chairs which our descendants will admire. We can assume that structural acrobatics will not be counted a virtue. Past events suggest that the chairs to be admired will be those in which there is no distortion of structure for visual excitement, in which human comfort is served rather than tolerated or caricatured, and in which the designer speaks softly and honestly instead of exploiting the fashionable or seeking fame through evocation of the past.

Take the book. It was published in April. The elimination can begin.

Neville Ward

## Shorter Notices

TO KONGESLOTT. By St. Tschudi Madsen. Oslo, Gyldendal. 1952.

An analysis of two Norwegian Royal palaces, one at Oslo, the other a country house called Oscarshall. The former is neo-classical of 1823, the latter castellated-Romantic of 1848 to 52. In their style both depend on northern Germany, that is, indirectly on England. There is, however, in the Oslo Palace one remarkably Norwegian feature: the decoration with Viking dragons in the Bird Room of 1841. The author of the book has, in fact, written a special paper on the neo-Viking style in Norwegian nineteenth century work (*Vestlandske Kunstindustrimuseum Årbok*, 1949-50). The architecture of the two buildings is analysed in great detail in terms of the categories of the Vienna School, that is according to their *Kunstville* and the intensity with which this is realised. There is an English summary. N.P.

## Books Received

HISTORY OF THE DECCAN. Vol. I. Part VIII. Fine Arts. G. Yazdani. Geoffrey Cumberlege. 15s.  
LAND DEVELOPMENT IN THE METROPOLITAN AREA OF TORONTO. Karl Werner & E. G. Faludi. Toronto Real Estate Board. \$2.00.  
VENICE. Laurence Scarfe. The American Philosophical Society. \$2.00.  
GRANITE CITY. A PLAN FOR ABERDEEN. W. Dobson Chapman and Charles F. Riley. B. T. Batsford. 42s.  
SCULPTURE. Arnold Auerbach. Elek Books. 18s.  
ST. ALBANS CATHEDRAL. H.M. Stationery Office. 2s. 6d.  
HIGHER INDUSTRIAL PRODUCTION WITH ELECTRICITY. British Electrical Development Association. 9s.  
BUILDING SANITATION. L. B. Escritt. Macdonald & Evans. 25s.  
LAMPEN. Gerhard Krohn and Fritz Hiehl. Callway, München.  
PLANNING ELEMENTARY SCHOOL BUILDINGS. N. L. Eryelhardt, N. L. Eryelhardt, Jr., Stanton Leggatt. Architectural Record. \$12.50.  
STREAMLINED SPECIFICATIONS STANDARDS. Ben John Small. Reinhold Publishing Corporation. 160s.  
NEW DESIGNS IN EXHIBITIONS. R. P. Lohse. Evlenbach.  
GEOMETRICAL COMPOSITION AND DESIGN. M. Ghyka. Alec Tiranti Ltd. 8s. 6d.  
AUSTRIA. Monk Gibbon. Batsford. 18s.  
MAP AND LANDSCAPE. Dorothy Sylvester. Philip. 25s.  
COVENTRY, THE DEVELOPMENT PLAN. North View Press, Coventry.  
QUALITY CONCRÈTE. Concrete Association of India. Rs. 7/8.  
HOUSING DESIGN. Part I. Central Mortgage and Housing Association, Ottawa.  
CUZCO. Unesco.



# SKILL

A MONTHLY REVIEW

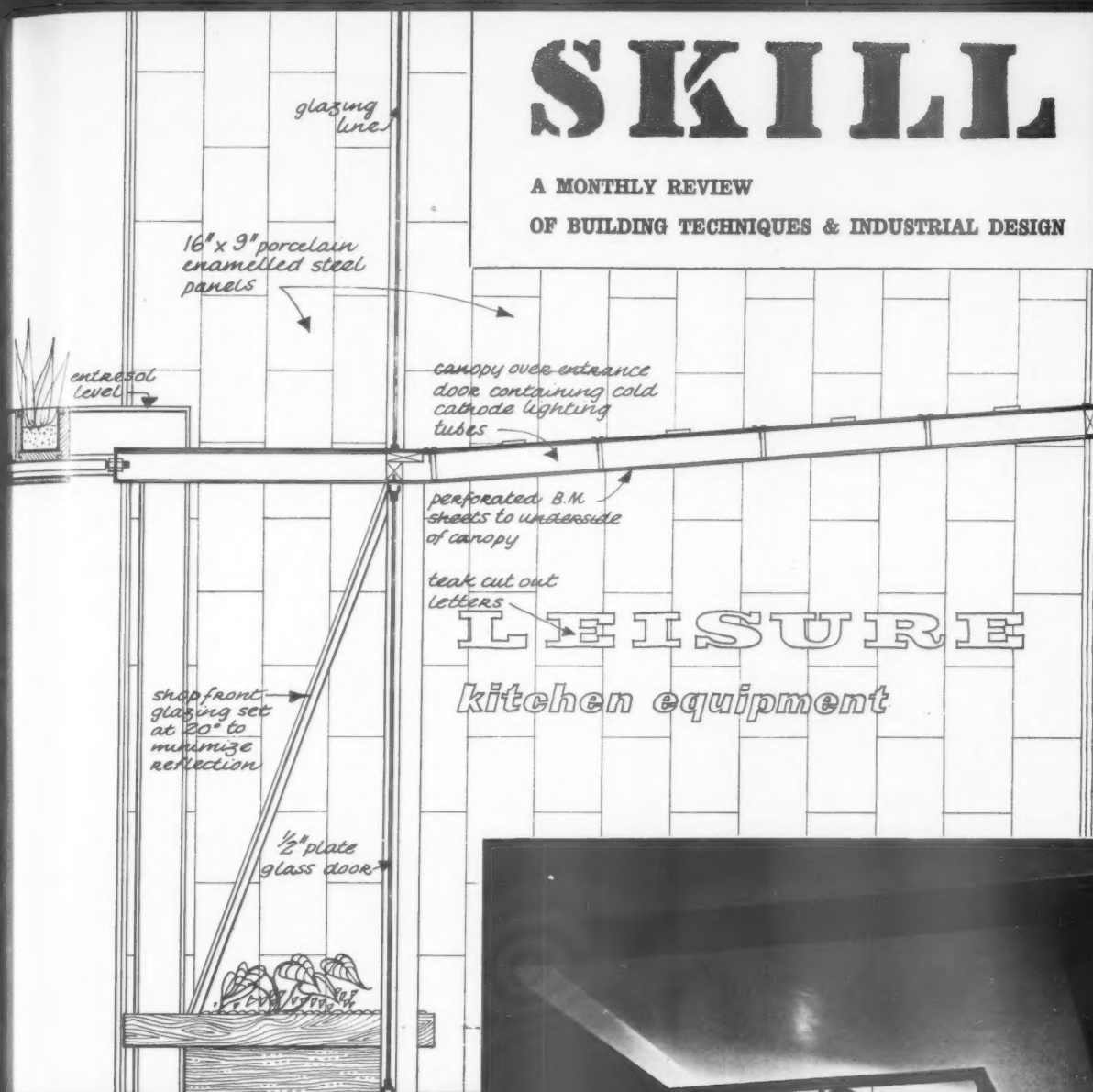
OF BUILDING TECHNIQUES & INDUSTRIAL DESIGN

1 interiors

2 design review

3 techniques

4 the industry



1, the showrooms from the archway of Heddon Street.

## 1 INTERIORS

### Showrooms in Regent Street

Architects: Challen and Floyd

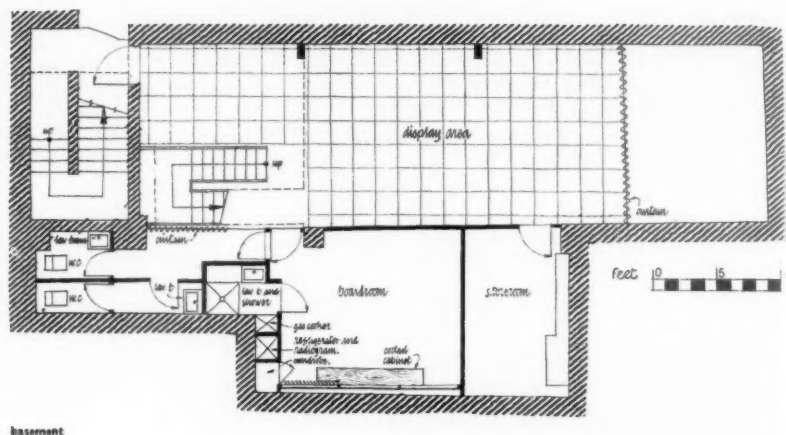
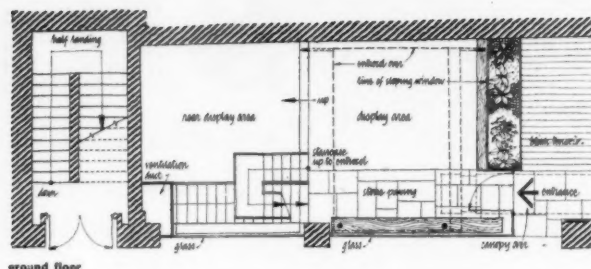
One of the most difficult problems in modern display is to make the scale of the showroom fit the scale of the exhibits. It can be done with wholesale disguise, but it is much harder to produce a result which both looks effective and corresponds naturally to some functional demand. That is what these showrooms displaying Leisure kitchen equipment do achieve; the alternative can be seen in many Gas or Electricity Board showrooms—separate fittings displayed clinically in an enormous room.

Heddon House, one of the least pleasant



of the inter-war Regent Street blocks, has a floor height of 13 feet; the kitchen fittings are rarely taller than 6 feet. The solution has been an entresol at 7 feet 3 inches, 3 and 7, which is both a small private bar and a display for the 'Leisure' bar sink. The area underneath is laid out as a kitchen with a striking illusion of domestic scale. The back of the main showroom has been raised and contains more fittings and a reception desk; the fact that it is cut off from the street and by-passed by the circulation, which accentuates the basement staircase, makes this into a credible room too. The basement, long and narrow, looks rather like a ship's galley, made up of five or six complete units.

The front has been set back 7 feet, and the space paved with black terrazzo floor and a Roman stone path to the door, which has a hollow canopy containing six fluorescent tubes, faced underneath with perforated bronze metal sheets. The corner pier has been left free-standing by this arrangement, and one side of it is faced with mosaic using inch-square porcelain enamelled steel tiles, in grey, red and white. The window is tilted inward at 20° to eliminate reflections from buildings on the other side of Regent Street—which can make window shopping exasperating—and only catches reflections from the



2 and 3, the front at night, showing the effect of lighting the canopy internally, and how lighting foreshortens the distance to the basement stairwell. The fascia carries 'LEISURE' on a yellow panel, and the diamond in a blue compartment. 4, Regent Street from the showroom. The wall is faced with grey-green porcelain enamelled steel panels, with 'LEISURE' in fret cut teak framed with extruded bronze metal and 'kitchen equipment' in 1/4 inch bronze letters polished. 2







5



6



7



5 and 6, two views of the board room. The divan in 5 was designed by the architects, and will convert into a bed. The wall behind it is faced with 'Primavera' straw wall-covering; the other wall is glazed in 'Plyglass' panels in mahogany frames. The mahogany panelled wall on the right hand side of 6 contains, from left to right, a wardrobe, a radio and record-player with refrigerator below, and behind the door a baby gas cooker, lavatory and shower. 7, the bar on the entresol. The wall behind it is grey, the ceiling is white up to the window, beyond it in the sheltered area it is bright red.

ground. The terrazzo floor is hardly visible in it.

The entresol is constructed of 2-inch-square timber joists and 3-inch-square BSB's with plate glass balustrade and mild steel uprights, supported on two

steel columns on the side facing Heddon Street and a welded portal frame next to the wall. The interior walls are generally plastered and painted grey; the wall behind the staircase is red. The ceiling is white above the entresol, grey behind it.

## 2 DESIGN REVIEW

### CAFETERIA EQUIPMENT

by Mary Ward

The snack bar and self-service cafeteria, so rapidly developed in this country by the demands of war-time conditions, attracts trade by virtue of quick service and cheap tariff. The renaissance of the coffee house, with luxurious fittings and equipment, offset by high tariff, suggests that there is a new demand for informal eating and drinking in leisurely, sociable conditions. Such an atmosphere is not created by stove-enamelled hard-

board, vitrolite and chromium-plated barrier rails, the language of the cafeteria. It is likely, as some caterers and equipment manufacturers are aware, that a modern parallel with the Chop House will follow, creating a need for attractive and carefully detailed equipment for service on a smaller and more intimate scale. The architect will have to incorporate the equipment as an integral part of carefully designed interiors in which cheap maintenance will not be the main concern, but cooking in view of the patron and display of food both before and after preparation will be all important.

Food rationing restrictions have not been conducive to this approach. The prompt solutions of war-time feeding problems have led to the neglect of suitable standard equipment. Certainly there

are manufacturers who will make almost anything to special order, but such equipment is necessarily costly and not attractive to a caterer setting up a small establishment where the turnover is un-

likely to recoup a large capital outlay for many years.

The situation suggests that the manufacturer should immediately attend to the evident developments if imported equipment, well to the fore in the new coffee house, is to be prevented from monopolizing this market.

The technical problems of powered equipment are very complex. The difficulties of creating an order among units of widely varying functions can be appreciated, but order is essential. Moves towards standardization have been made in the field of industrial equipment. It is to be hoped that something is achieved and the same attention paid to the field discussed here.

#### preparation machines

1, Selyac electric, three-speed, universal, epicyclic action machine, supplied with various attachments to mix, peel, slice and crush all kinds of food. Available in 3 or 6 quart capacity models; cast aluminium alloy, cream cellulosed, and stainless steel parts: 220/230 volts, single phase A.C. or three phase D.C. Price for 3 quart model with attachments shown £15 13s. 0d. By Selyac Precision Engineering. 3, Q10 epicyclic action electric mixing machine of 10 or 12½ quarts capacity, three speed; 27½ inches high by 13 inches by 18 inches; cast-iron, black and cream cellulose enamelled; bowl of tinned steel. Supplied for any voltage, split phase, continuously rated ½ h.p. motor. By Peerless and Ericsson. 2, R.C.4 electric potato chopper, capacity 25 to 30 lb. per minute. 14½ inches high by 31 inches by 17½ inches. Stainless steel knives, tinned brass hopper, exterior finish elsewhere cream or grey-green enamel. ½ h.p. motor supplied for any electrical specification. £76. By Peerless and Ericsson. 4, S.1 electric food slicer. 18 inches high by 22 inches by 16 inches, finished in white vitreous and stove enamel, lined black and gold. ¼ h.p. motor for single phase A.C. supply; also for D.C. extra. Approximately £110. By Crypto. 5, 'Hyc' electric roll cutter, capacity 60 rolls per minute, left-hinged for filling; 22 inches high by 12 inches by 22 inches, finished cream stove enamel. By Medcalfe. 6, 'Champion Senior' hand operated butter pat machine, capacity 1 lb. per load; stainless steel container, remainder finished in white vitreous enamel and chromium plate. By Medcalfe. 7, A.E.G. electric coffee mill for light use only, output 4½ ounces in 5-6 minutes. 6½ inches high by 7½ inches by 4½ inches. Body of moulded ivory plastic, container clear plastic. 210/230 volts, A.C. only. £13 11s. 0d. Imported machine marketed by Fairfax Engineering. 8, E.2155, heavy duty electric coffee mill, output 2½ lb. per minute. 33½ inches high by 28½ inches by 13½ inches. Hopper of polished aluminium, remainder finished red cellulose enamel. 1 h.p. motor for all standard A.C. single and three phase specifications and for D.C. extra. £125. By Hobart.





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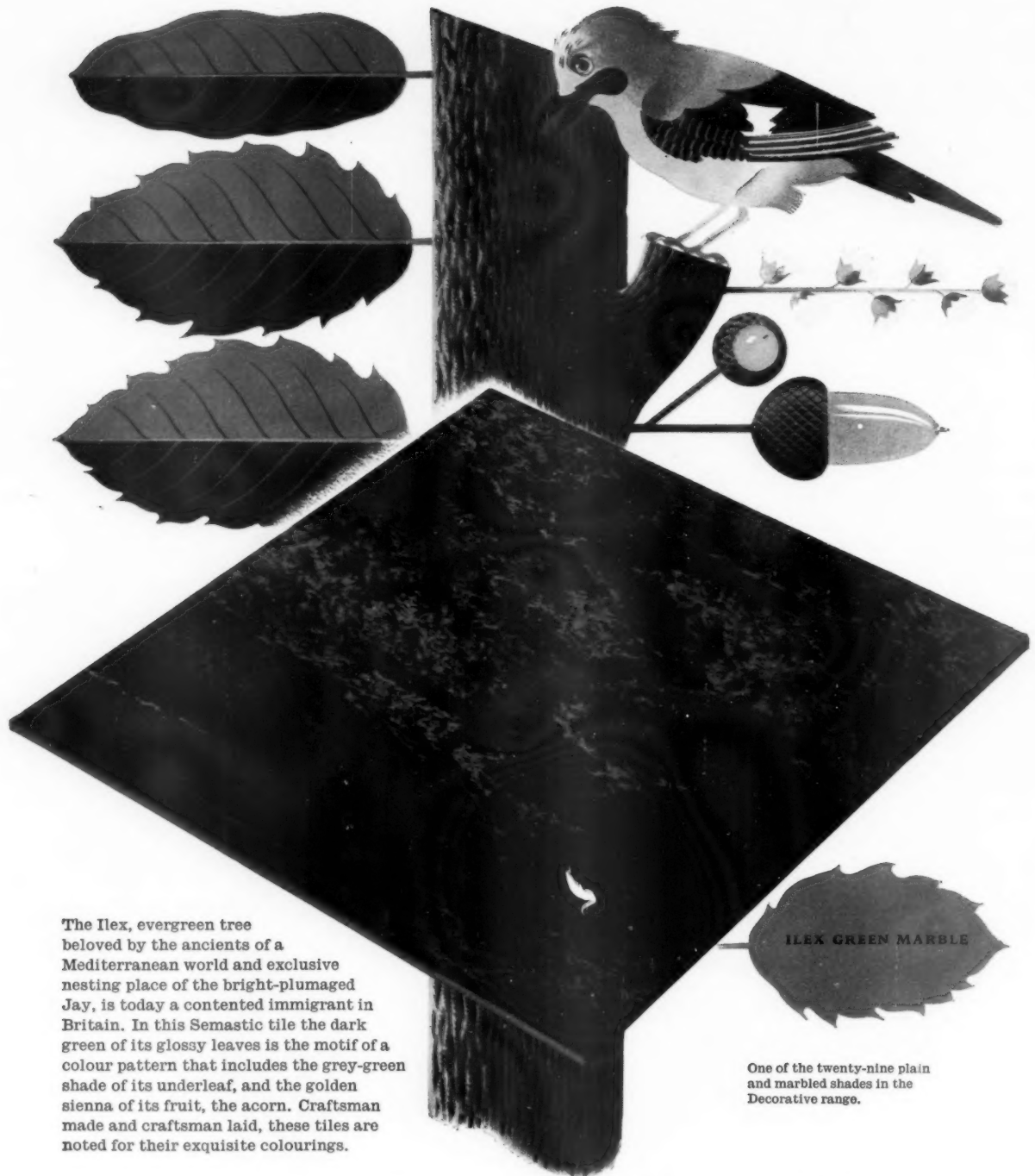
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The Ilex, evergreen tree beloved by the ancients of a Mediterranean world and exclusive nesting place of the bright-plumaged Jay, is today a contented immigrant in Britain. In this Semastic tile the dark green of its glossy leaves is the motif of a colour pattern that includes the grey-green shade of its underleaf, and the golden sienna of its fruit, the acorn. Craftsman made and craftsman laid, these tiles are noted for their exquisite colourings.

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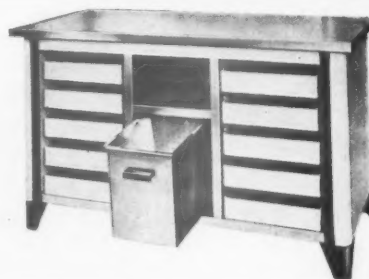


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## counter units

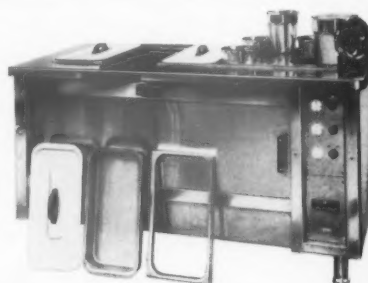
Broadly speaking, counter units are constructed of angle iron frames with sheet metal panels planted on or set within the frames. This allows the interior designer a certain flexibility in the treatment of the counter fronts. It also results in a lack of character common to all static metal carcass furniture and equipment. There are three main categories; simple storage units, either open shelf and tray or cupboard type for crockery and utensils, and hot and cold storage for food. Nearly all have stainless steel worktops. There are innumerable variations of detailed arrangements within these categories and only representative types are shown here. Each manufacturer makes the various types in matching dimensions, but there are variations in this respect between one manufacturer and another. 9, crockery storage unit for cups, saucers and small plates. 36 inches high by 60 inches by 30 inches. Stainless steel top, trays and waste bin. Casing vitreous enamel inside and out. £146 15s. 0d. By W. M. Still. 10, H.C.2410 electric hot cupboard, 36 inches high by 72 inches by 24 inches. Polished steel hobs, remainder silver-grey vitreous enamel. Removable doors. 5.1 kW. maximum loading, A.C. or D.C. With top and bottom heat, £72 15s. 0d.; bottom heat only, £68 15s. 0d. By Simplex. 11, 415E 'Alacarte' electric hot closet. Containers are interchangeable and immersed in a steam bath, keeping solid or liquid food hot without drying. 36 inches high by 57 inches by 33 inches; other lengths available. Faced in stainless steel on service side, with vitreous enamelled sliding doors; end panels in white, cream or grey mottled vitreous enamel. 5 kW. loading; for standard single phase with thermostat to hot closet or for three phase with manual controls. £206 17s. 0d. By Gardiner and Gulland. 12, a more versatile new 'Alacarte' fitted bain marie hot closet. Top fitted with two square frames to take alternative size containers available in two depths or blanking off pad to form plating up or serving area. 48 inches or 72 inches long, similar specification to the previous unit. Available for gas or electricity. From £194. By Gardiner and Gulland. 13, Unit 1 back bar 'Called Order Exhaust' Unit built to accommodate a deep fat fryer at one end and grillers on a higher level. It incorporates a cutting board in either hardwood or stainless steel and a built-in exhaust hood, to be connected to existing ducting or to an independent fan, fitted with grease filter. 36 inches high worktop of stainless steel, aluminium alloy panels, 72 inches high overall by 72 inches by 24 inches. £218 8s. 0d. One of a series of back bar units by Gardiner and Gulland. 14, Unit J of the same series, a Saladaire Unit, designed for the preparation of salads and sandwiches to order, incorporating salad bins below roll over cover, bread and waste drawers, refrigerator, cutting board, and work top. Matt stainless steel. 36 inches high worktop, 46 inches overall height by 78 inches by 24 inches or 30 inches deep. £332 12s. 0d., at 30 in. deep, including installation. By Gardiner and Gulland. 15, Unit L, refrigerated cupboard with  $\frac{1}{4}$  h.p. air cooled condensing unit. Stainless steel, 36 in. high by 60 in. by 24 in. or 30 in.



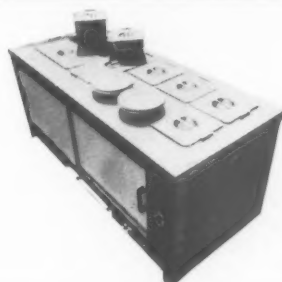
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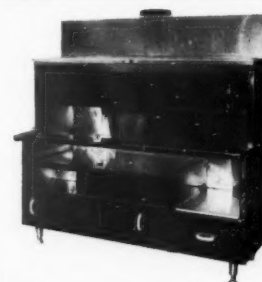
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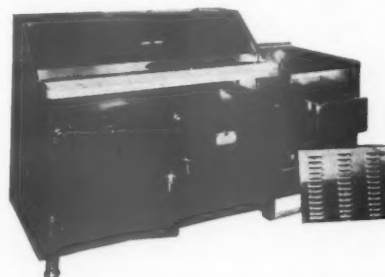
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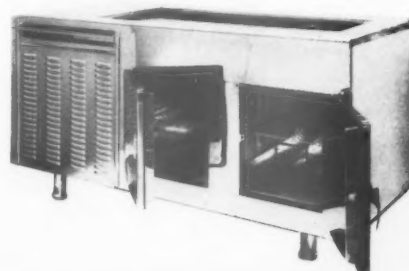
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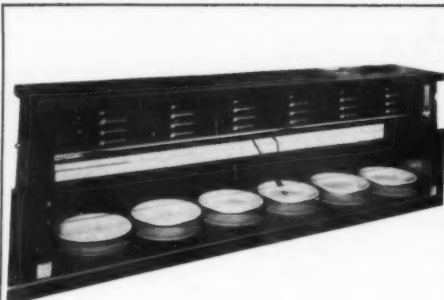
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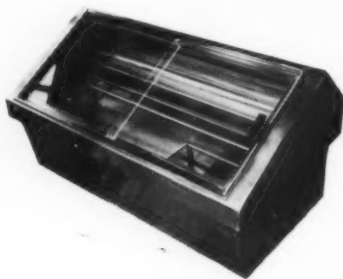
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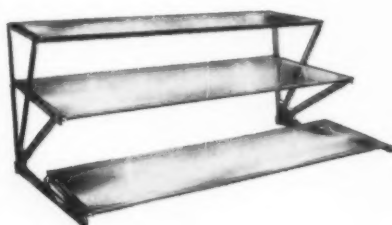
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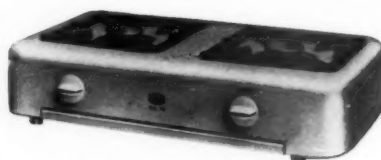
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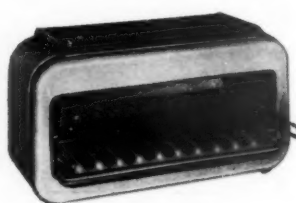
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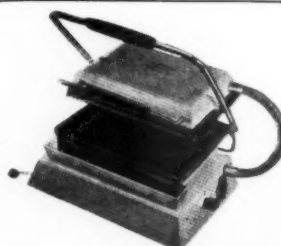
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## display

It has been found that a caterer who can display complete hot meals and composite ice cream sweets in a proper condition to eat has a great advantage over competitors. The drying out of foods kept hot from the underside of the plate and the disintegration of ice cream sundaes has been the technical problem. 16, Unit 3/3 'Sunglow' infra-red overhead heating unit is claimed to overcome the difficulties by exploiting the penetrating qualities of infra-red rays which keep the food evenly warm without forming a hard outer skin. Polished stainless steel and plate glass; fitted with three 60-watt lamps between the heaters and simmerstat control; 2 kW. loading; 18½ inches high by 66 inches by 12 inches. £71 8s. 0d. By Gardiner and Gulland. 17, 2/1 Two-Tier 'Polarslab,' the cold equivalent. This is necessarily, a complete stainless steel counter unit, including a chilled cupboard lined in white vitreous enamel. Complete unit 36 inches high to counter by 69 inches by 33 inches. ½ h.p. air cooled compressor. £329, including installation. By Gardiner and Gulland. 18, Unit 11/1 'Sweetfreeze' display cabinet, designed to be recessed into the counter top of stainless steel with sliding plate glass windows. ½ h.p. air cooled condensing unit. 19½ inches high by 36 inches by 19½ inches. £181 7s. 0d., including installation. By Gardiner and Gulland. 19, 20, 21, three types of pastry display units, the 'Caxton,' 32 inches long, £12 1s. 0d., chromium plated; the 'Vistaclear' diecast aluminium alloy, 36 inches long, £25 14s. 0d.; and the 'Bi-Leg,' 30 inches long, chromium plated, £11, all supplied by Gardiner and Gulland. These units can be considered typical and it is difficult to understand why more elegant solutions to this comparatively simple functional problem are not forthcoming.

## counter cooking

The most interesting post-war developments in this field is the use of infra-red grills. Several London club grill rooms have been re-equipped with this type of grill which gives very speedy service. 22, HO.5616, electric heating plate, ground and polished cast iron top, base finished black stove enamel. 5 inches high by 24 inches by 18 inches and smaller. 2,500-watt loading in largest size, £9 17s. 0d. By General Electric Co. 23, 72B 'Main' gas rangeplate in cast iron and pressed steel, finished in cream vitreous enamel. Prices on application to Gas Area Boards. By R. and A. Main. 24, HO.38 electric griller-toaster in sheet steel casing finished in vitreous grey enamel, mottled front, plain back and sides. 3 kW. loading, for single phase A.C. or two wire D.C. 12 inches high by 22½ inches by 11½ inches. £15 5s. 0d. By General Electric Co. 25, G.225 electric grill of cast iron finished in dapple grey or cream and black vitreous enamel. 11½ inches high by 19½ inches by 14 inches. £9 7s. 0d. grey, or £10 6s. 0d. cream. By R. and A. Main. 26, 'Elga' automatic electric toaster, chromium plated case on 'Warerite' base. 2.4 kW. loading for A.C. or D.C., £19 19s. 0d. Factors, Gardiner and Gulland. 27, 'Turmix' B Infragrill, approximately 12 inches

[continued on page 271]



*Architect: Gordon Jeeves Esq.*

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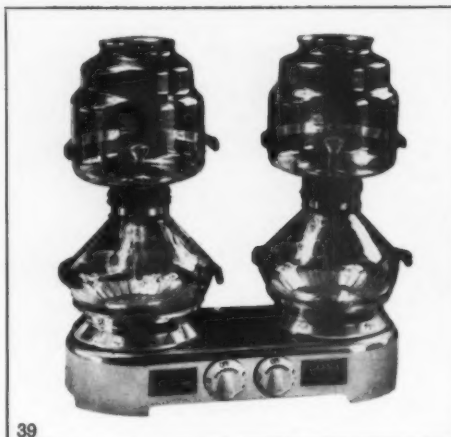
by 10 inches, 1.5 kW. loading, £44 10s. 0d. Factors, Gardiner and Gulland. **28**, 'Perfect' heavy duty infra-red grill in black with cream cellulose enamel base. 1,200 watt maximum loading 210/240 volts A.C. or D.C., £13 2s. 0d. Imported and marketed by Fairfax Engineering. **29**, Infra-grill box in nickel plated steel with stainless steel spit, 13 inches high by 10 inches by 12 inches. 1,200 watt loading, 210/230 volts A.C. or D.C., £16. Imported and marketed by Fairfax Engineering. **31**, 'Savoy Minor' gas grill and egg poacher, in cast iron, finished in grey mottled vitreous enamel with poaching pan in polished aluminium. 13 inches high by 21½ inches by 14½ inches, £10. By Radiation Group Sales: Large Apparatus Division. **30**, 'Twin' electric waffle making machine, in silver grey stove enamel or other colours to order, with chromium plated covers. 9½ inches high by 16 inches by 9½ inches, 950 watt loading, for A.C. only. £15 15s. 0d. By S.L.R. Electric. **32**, 'New Elizabethan' gas poulet-broche, with steel spits and gearing in casing of old gold anodized aluminium or other colours to order; drip tray of tinned steel. £75. By Briffault Engineering. **33**, HO.20 single pan electric fish fryer in sheet steel casing finished in mottled grey vitreous enamel with corner angles in chrome. 34 inches high by 27 inches by 27½ inches, for single, two or three phase, four wire A.C. or D.C. £94. By General Electric Company. **34**, electric counter pie warmer in stainless steel, 17 inches high by 17 inches by 18 inches, 2,250 watt loading; also available for gas. £57 10s. 0d. By G. F. E. Bartlett & Son. **35**, electric counter bain-marie unit with warming drawers, stainless steel with bain-marie of tinned copper, 17½ inches high by 21½ inches by 34 inches. Also available for gas. £82 15s. 0d. By G. F. E. Bartlett & Son.



#### tea and coffee making

Equipment for tea and coffee making is either designed for a steady, continuous supply, or for the infusion of large quantities for sudden and heavy demand. Equipment can be obtained to make one or both drinks; when combined it is usually referred to as a café set. **36**, HO.86, a simple electric water boiler of heavy copper with tinned interior, chromium plated exterior or polished copper. Available in capacities from 3 to 10 gallons: for 6-gallon size, loading 6 kW., 25½ inches high by 16 inches, £35 4s. 0d. in chromium finish, £32 16s. 0d. in polished copper. By General Electric Co. This unit is for tea making by individual pot and can also supplement hot water supply for any other need. Similar types are available for gas, and are often supplied with a flat top with guard on which a teapot can be kept warm. **37**, an insulated multipot of 5-gallon capacity, designed for the bulk infusion of tea or coffee, often in a place remote from the counter. Stainless steel lining, mild steel stove enamelled casing in choice of colours, or stainless steel 19 inches high by 13½ inches, £14 13s. 0d. By G. F. E. Bartlett & Son. Once the boiling water has been put into the multipot no

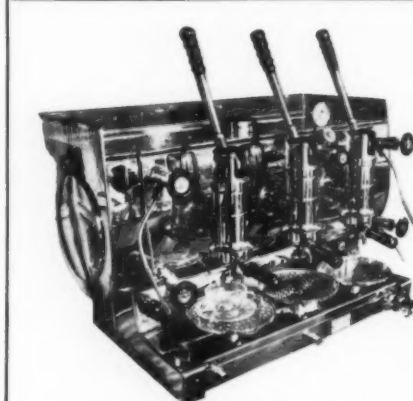




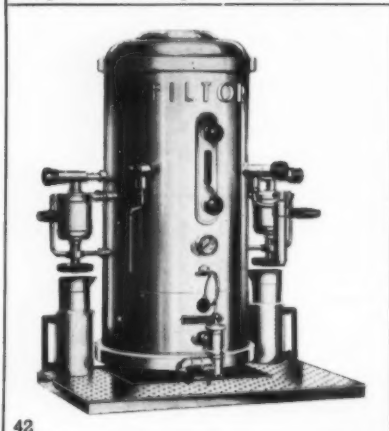
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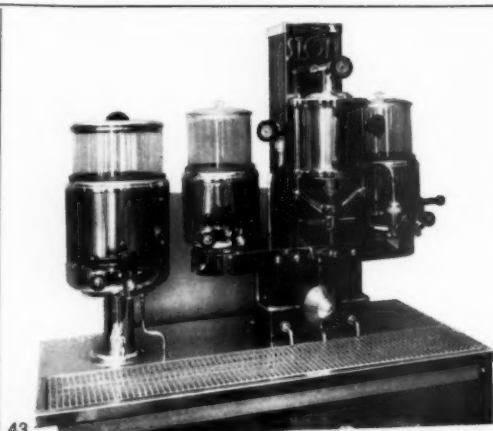
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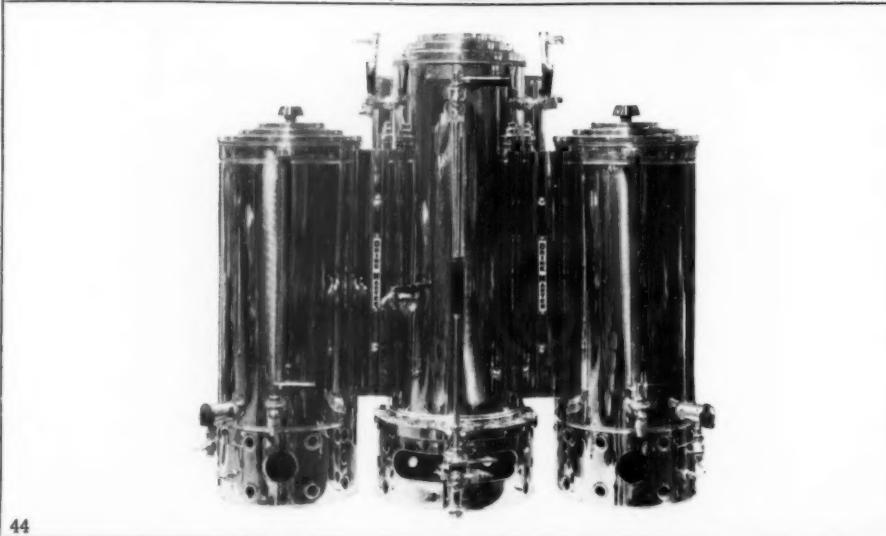
41, front and back of Pavoni 'Mignon 53'.



42



43

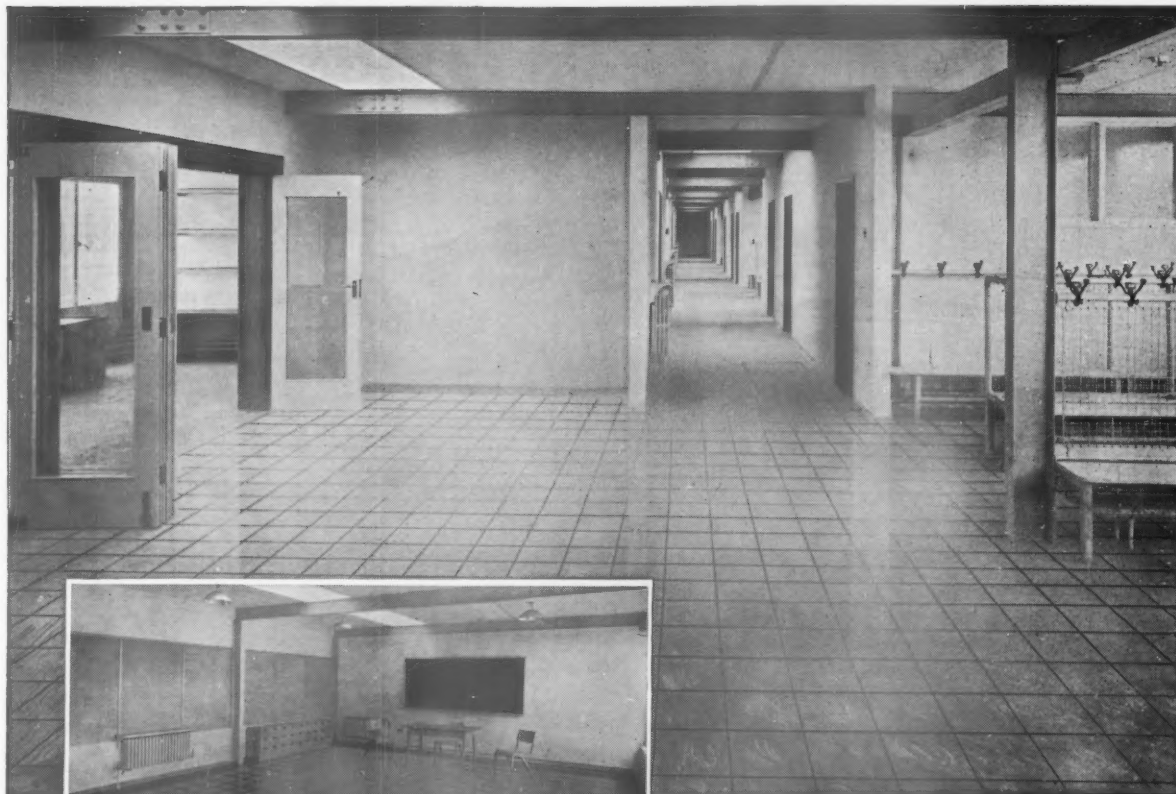


44

further heat can be applied to the drink. 38, K.3G 2-gallon capacity jacketed urn is designed to keep ready-made tea or coffee or plain milk at boiling point. 21½ inches high by 11 inches, for gas, in chromium plated copper. £24 12s. 6d. By G. F. E. Bartlett & Son. 39, F.B.103 electric Cona twin coffee maker, capacity up to 8 gallons per hour. 17 inches high by 16½ inches by 8 inches in glass and chromium or black crackle enamel or special colours to order. For gas, electricity or spirit lamps. A simmerstat is incorporated in the A.C. electric model £29 12s. 0d. By Cona. 40, the electric 'Coffee-master,' two-urn model, infusing coffee in one urn and boiling milk in the second glass-lined jacketed urn, both chromium plated copper. The coffee urn has a tinned interior, capacity approximately 84 small cups. 17 inches high by 24 inches by 12 inches on the base. Loading for electric model illustrated is 2 kW., £48; also available for gas, £39. By Crypto. 41, Pavoni 'Mignon 53' express coffee machine, chromium plated copper front and polished brass sides. 54 cm. high by 87 cm. by 51 cm. Loading for electric model 4,000 watt maximum. Also available for gas. £331. Imported and marketed by Fairfax Engineering. The essential differences between this type of machine and the following British type are that the express coffee machine employs high pressures to force near boiling water through the coffee grounds which are portioned out to serve each cup separately and makes coffee only, whereas the British type uses a lower pressure to make larger quantities at each infusion and provides a draw-off from the boiler for making tea by the pot. 42 is of the British type: the 'Filtor' gas tea and coffee unit incorporating a boiler and two pressure coffee infusers, two heat exchangers, two 2-pint insulated coffee jugs, boiling water draw-off for tea-making and steam jet for teapot warming. Boiler capacity 275 pints of boiling water per hour. Coffee output 1 quart in 1½ minutes. Chromium plated or cellulosed to any colour, jugs stainless steel; chromium and stainless steel fittings. From £225. By G. F. E. Bartlett & Son. 43, BPGM.1 electric café set, with under counter copper boiler, two pyrex-lined 1-gallon urns, separate 2-gallon milk urn, jacketed from the same boiler, stainless coffee infuser at the centre and stainless steel counter top. Draw-off tap for tea making and steam nozzle for pot warming. Casing in bronze anodized birmabright. Output approximately 48 pints per hour. Loading 12 kW. supplied for any electrical specification. £634 complete with cabinet. By James Stott. 44, Y.325 'Drinkmaster' gas heated non-pressure set with two jacketed side urns of 5-gallon capacity, fitted with auxiliary heaters with thermostatic control, and supplied with infusion baskets for tea or coffee. Output 6½ pints per minute. Nickel plated copper with side urns lined with tinned stainless steel, from £200. By Crypto.



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Contractors: West Ham Corporation, Works Department.

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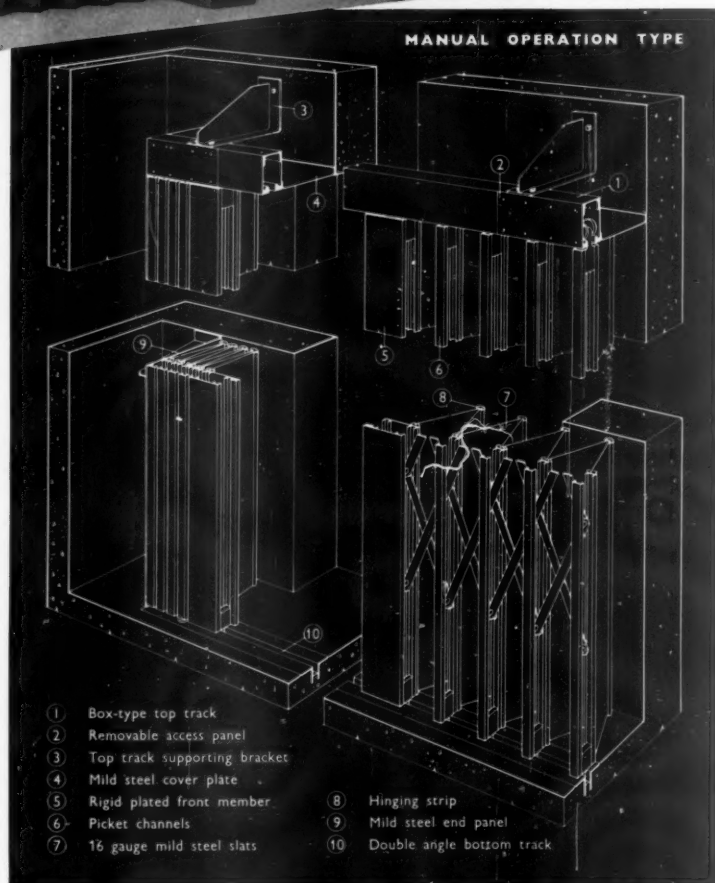
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#### soda fountain

45, 'Silver Knight' sodacream unit incorporating syrup pumps, carbonating unit, ice cream bins, two sinks and draining board with swivel mixer valve.  $\frac{1}{2}$  h.p. condensing unit. Worktop in a single sheet of stainless steel. 42 inches high excluding draught arms, by 78 inches by 33 inches. £718 2s. 0d., including installation. By Gardiner and Gulland.

45



#### washing up

In small establishments with light menus it may be desirable to wash dishes in the counter area. Apart from hand-washing, for which there are many stainless steel sinks in a wide range of sizes, there are now some suitable machines on the market. 46, 'Glassmaster' electric glass-washing machine in grey cellulose enamel aluminium and perspex. 17 inches high by 36 inches by 7 $\frac{1}{2}$  inches, 2 $\frac{1}{2}$  kW. loading for A.C. or D.C. £72 10s. 0d. By Hoover. 47, 'Aquadale' electric dish-washing machine with self-contained water heating unit; best used to top up existing hot water supply. The machine carries out the complete process automatically in ten minutes. Cream stove enamelled aluminium and stainless steel. 5 kW. loading. £247. By W. H. Paul. 48, 1050 'Dalex' automatic electric glass-washing machine with a cold rinsing section; in silver anodized aluminium and clear plastic. 3 $\frac{1}{2}$  kW. loading. By Gaskell and Chambers.

46



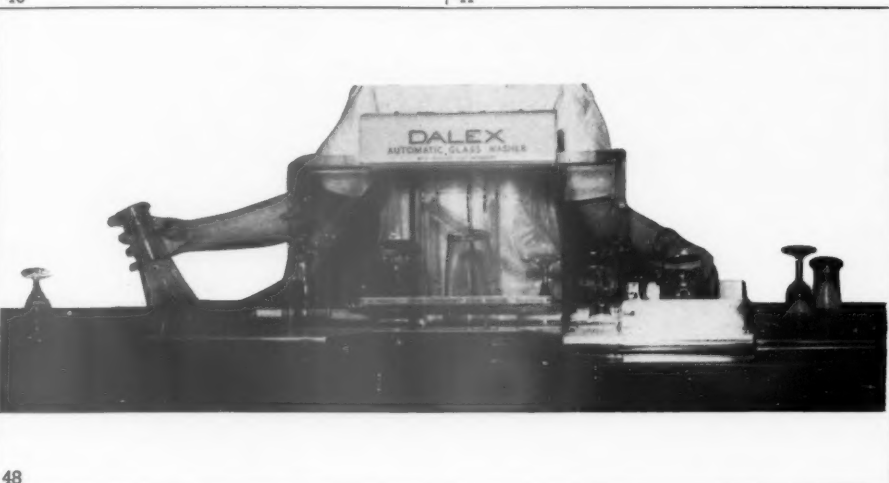
47



#### Suppliers

Selyac Precision Engineering Co., Newton Abbot, Devon. Peerless & Ericsson Ltd., 1 Carlisle Road, The Hyde, N.W.9. Crypto Ltd., North Circular Road, N.W.10. Medcalfe & Co., 141/2 Saffron Hill, E.C.1. Fairfax Engineering Ltd., 1 Regency Parade, Finchley Road, N.W.3. The Hobart Manufacturing Co., Bounds Green Road, New Southgate, N.11. W. M. Still & Sons Ltd., 29-31 Greville Street, E.C.1. Simplex Electric Co., Oldbury, Birmingham. Gardiner & Gulland Ltd., Garlard Works, Hither Green Station, S.E.13. General Electric Co., Magnet House, Kingsway, W.C.2. R. & A. Main Ltd., 48 Grosvenor Gardens, S.W.1. Radiation Group Sales, 7 Stratford Place, W.1. S. L. R. Electric Ltd., 82 Victoria Street, S.W.1. Briffault Range Co., 96 Roman Way, N.7. G. F. E. Bartlett & Son, Bell Street, N.W.1. Cona Ltd., Feldon Works, Railway Place, S.W.19. James Stott & Co. (Engineers), Oldham, Lancs. Hoover Ltd., 211 Regent Street, W.1. Gaskell & Chambers Ltd., Dalex Works, Birmingham, 4. W. H. Paul Ltd., Breaston, Nr. Derby.

48



## 3 TECHNIQUES

### THE GIFFORD-UDALL JACK

by John Carter

When prestressing first came into the architects' world it appeared to be a highly specialized technique requiring expensive equipment and the advice of uncommon engineers. But its intrinsic advantages and the live and urgent situation in the building industry at the time ensured that development would be rapid and extensive. Perhaps the time is not so far off when a prestressing jack will be nearly as much standard equipment for the general builder as the concrete mixer is now.

This can only come about when there is a sufficient number of experienced tradesmen, when knowledge of the technique has



been assimilated by the rank and file of architects and when the tackle used is simple, neat and inexpensive. The Gifford-Udall jack seems to provide admirably for the last of these conditions. This jack was not mentioned in the general article on Post Tensioning (A.R., June, 1954) since at the time when that was being prepared there were insufficient examples where the jack had been used. We therefore now supply a full-dress account of this, the fourth type of jack to come into general use in this country, so that it may take its place in readers' minds alongside the other three.

#### operation of the jack

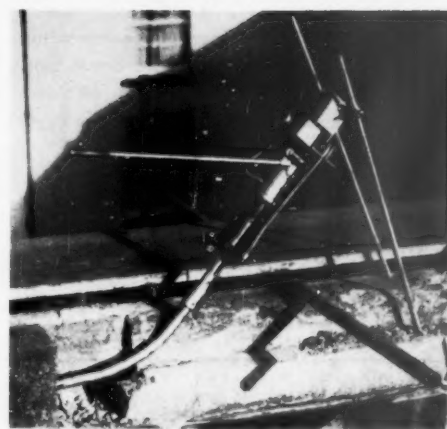
The stressing jack and the hand-operated hydraulic cylinder are all in one unit, weighing 56 lb., which stands on legs adjustable to the angle and position of use. The 'pull' may be in line with or at an angle to the line of the cable.

A spiral reinforcement and a steel thrust ring are cast into the end of the concrete member. An anchor plate with holes for the wires and anchor grips fits against the ring; the wires, which are stressed one by one, protruding about 8 inches. An anchor grip with its tapered 'wedges' or 'carrots' is threaded on to each wire with a spacer (consisting of an anchor grip outer) next to it. Next to this again but spaced some distance from it is a spring-loaded grip, so you now have three 'beads' on the wire. Now the jack can be brought up, its tube being passed over the 'beads' to bear against the anchor plate, its arms being closed to shoulder against the spring-loaded grip. There is a slot in each side of the tube through which the arms reach the grip. The jack is then pumped, the effect of which is to push the tube towards, and the arms away from, the anchor plate. The 'carrots' in the spring-loaded grip tighten on to the wire which is thus pulled.

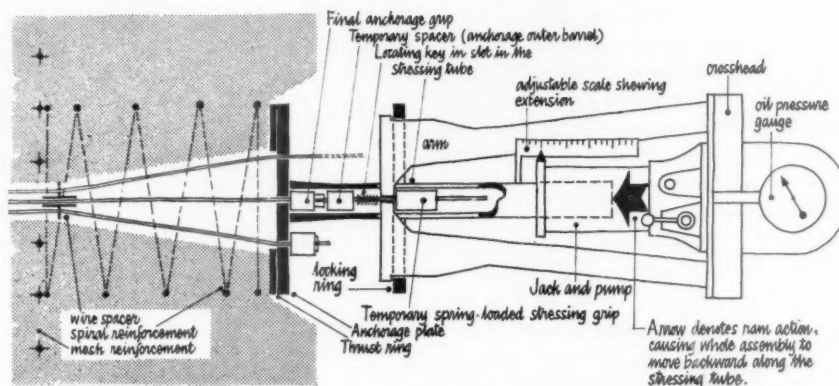
When the correct pressure shows on the gauge and the required extension is reached, the anchor grip in the anchor plate is locked. This is done by inserting a drift tool through a slot in the tube to engage with the anchor grip carrots; a hammer tap on the tool tightens these and the wire is fixed for good. Jack pressure may now be released, the arms disengaged from the spring-loaded grip and the whole jack withdrawn. The wire is sawn off, the spring-loaded grip freed from it in a special mandrel to use again on the next wire.

Despite this long description it takes about three minutes to stress each wire.

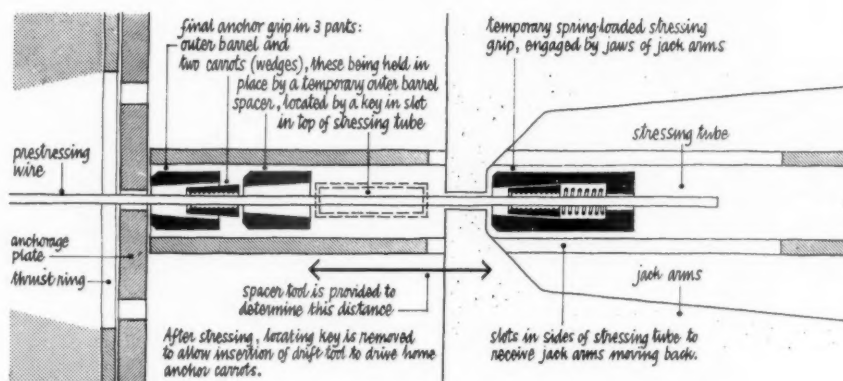
The same type of anchor grip is used at both the dead and the stressing ends,



1, the jack set up for stressing.



2, section of jack before stressing, showing detail at end of beam.



3, detail of grips and anchors during stressing.

various sized carrots being available according to the diameter of wire used (up to 0.276 inch max.). The cable may be composed of any number of wires up to 12, the ultimate stress of the metal being 90-130 t.s.i., the value at stressing about 65 per cent of this limit. To prevent wires binding on each other, and to maintain correct position when the cable is curved, metal spacers are used at intervals along the cable, and these assist the flow of grout. When a number of pre-cast units are built up string-of-beads fashion the ends of the holes in each unit are rebated to receive a short rubber bush to prevent the jointing mortar from penetrating the hole.

#### uses of the jack

The consulting engineer and the makers suggest a number of uses for the equipment, the most interesting of these concerning alteration work. If a new opening is needed in an existing wall, the use of needling and strutting may be avoided. The procedure is to make a number of short pre-cast units with ducts for the cable. A hole is cut through the wall, one unit built in and the brickwork made good around it. Another unit is then built in adjacent to the first, and so on for the total length. The prestressing cable is then threaded through the beam so formed, stressed and anchored, and now the brick-

(continued on page 276)



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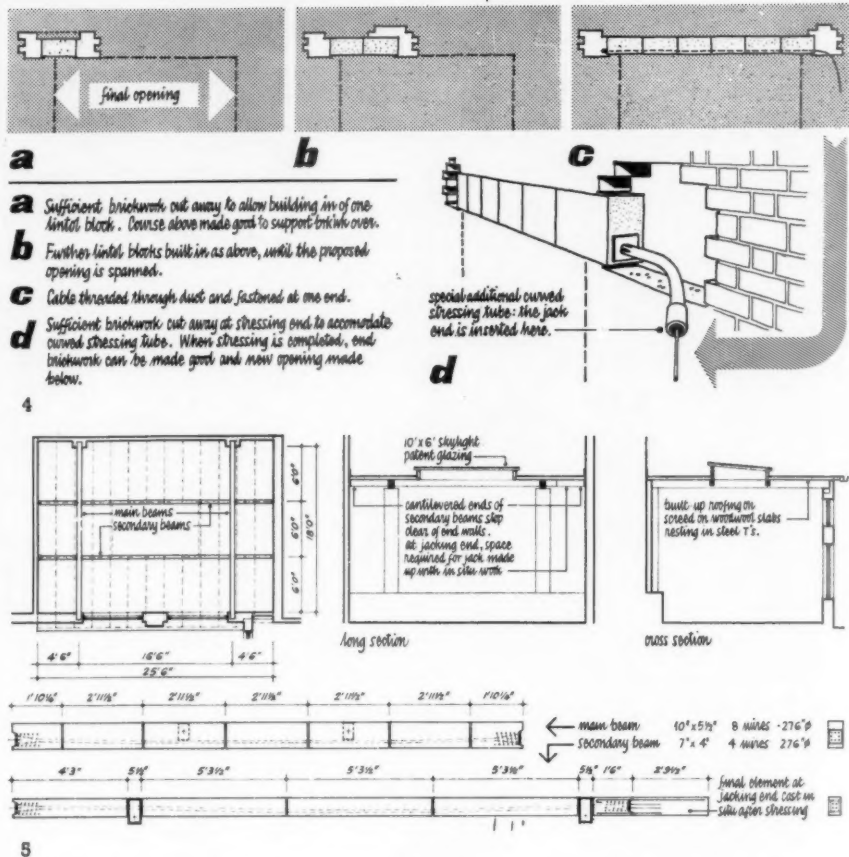
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continued from page 274]

work underneath may be cut away and the new jambs formed. A special curved tube is provided so that the jack can be operated outside the line of the cable. This kind of use is not, of course, peculiar to the Gifford-Udall jack, but the small size of the equipment would seem to make it a more feasible proposition for the modest job and the general builder.

Post tensioning also offers a solution in cases where work is difficult of access. Such a problem occurred in a city building where a new roof was required 18 feet by 25 feet on plan. The solution proposed and successfully carried out was to use pre-cast units small enough to be taken up in the passenger lift. The largest was 5 ft. 3 in. long and weighed 147 lb.

Scaffolding was put up for the beams to be assembled in their final positions, joints were mortared and after three days the cables introduced and stressed. The top surface of secondaries was flush with the top surface of the primaries, the cable of the former passing through a transverse hole in the latter. One special point was that the two short walls under the roof were incapable of extra load so the secondaries were made to cantilever beyond the primaries and finish just clear of the walls. Roof finish was in woodwool slabs on pressed steel tee sections, with three-layer felt.



4, method of forming an opening in an existing wall without underpinning. 5, plan of roof at 23 Old Bond Street showing prestressed cable and dimensions.



Milners Steel Rolling Shutters as installed at the Old Vic Theatre, Waterloo Road, London.

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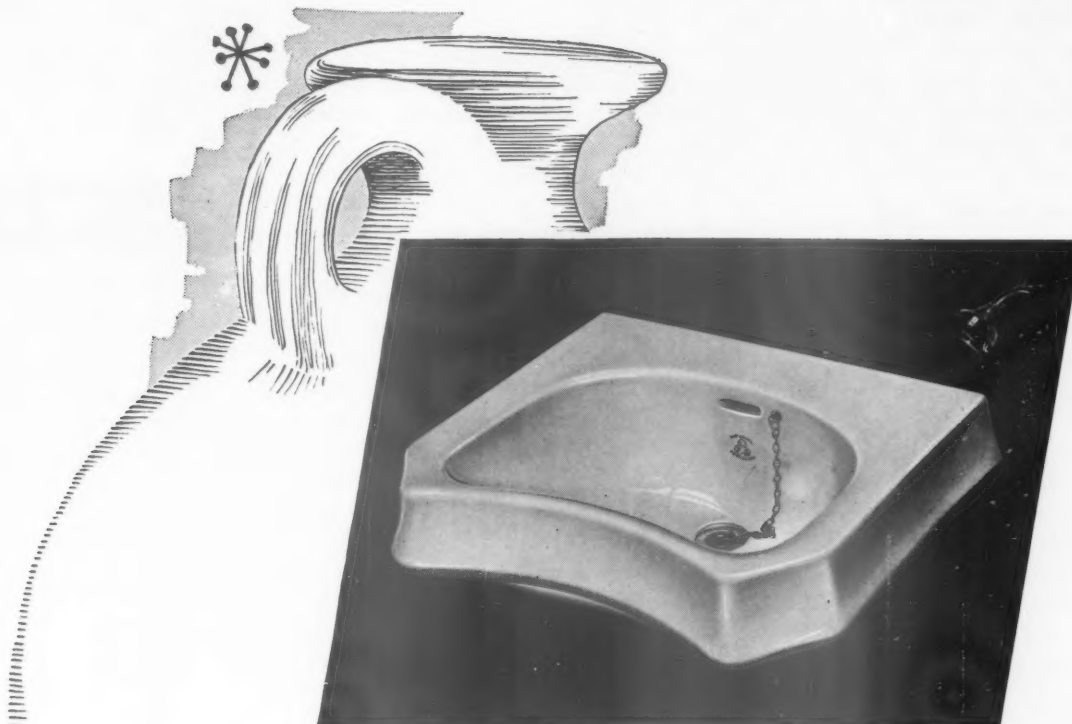
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special fillers which are grooved to take electrical conduits and with flush doors constructed in the same manner as the units.

The 2-inch hardboard covered version has U value of .37, a sound reduction of 34 decibels and a 30-minute fire resistance rating, the corresponding figures for plasterboard facing being .33, 34 decibels and 90 minutes; but the most surprising attribute of the units is their load-bearing capacity, which rises to over 3,000 pounds per foot run for units of 7 feet height, thus placing the panels easily in the load-bearing class. In Sweden the hardboard faced panels are in fact considered weather resistant and are used as load-bearing external walls. But the corresponding use in this climate is as the inner skin of cavity walls. At the time of writing the units are manufactured in Sweden, and prices (for the 2-inch unit 31s. 0d. per square yard to supply and 5s. 0d. to 6s. 0d. per square yard to fix) make the units competitive for good quality office partitioning, but not for housing. It is intended, however,

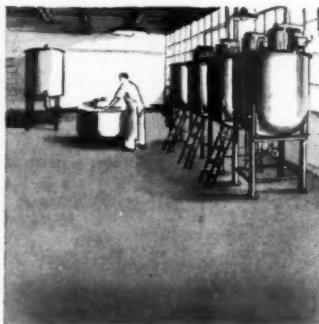
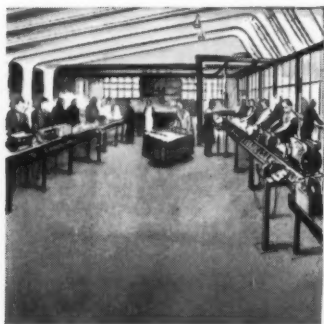
to begin manufacture in this country shortly, when the partitioning will, presumably, become economic for wider uses. (Richard Savage Agencies Ltd., 79 Portland Place, London, W.1.)

### CONTRACTORS etc

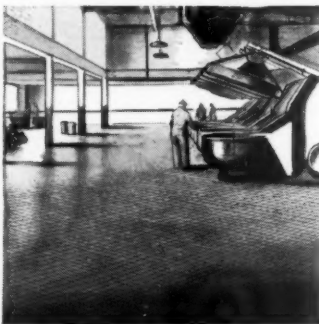
**Flats at Putney Heath** for the London County Council. *Architect to the Council:* Dr. J. L. Martin. *Architect in charge:* H. G. Gillett. *General contractor:* Tersons Ltd. *Sub-contractors and Nominated suppliers:* Tarmacadam: Wainwright Paving & Contracting Co. *Electrical installation:* Haines & Sheppard Ltd., and Duncan Watson (Electrical) Engineers Ltd. *Plastic tile flooring:* Marley Tile Co. *Lift installation:* Bennie Lifts Ltd., and Express Lift Co. *Hot and cold water services and ventilation to laundries:* Benham & Sons Ltd., and Champions (London) Ltd. *Dry rising mains:* Automatic Sprinkler Co. *Cement glazing:* Prodorite Ltd. *Lightning conductors:* R. C. Cutting & Co. *Demolition:* Jeff Elbur Ltd. *Formwork, scaffolding and wrought ironwork:* Scaffolding (Gt. Britain) Ltd. *Plumbing:* Z. D. Berry & Sons Ltd. *Painting:* Jenner Bros. (Ilford) Ltd. *Glazing and patent glazing:* Faulkner, Greene & Co. *Plastering:* Pollock Bros. (London) Ltd. *Wall tiling:* Parkinsons (Wall Tiling) Ltd. *Asphalting and felt roofing:* Kent Asphalte Co. *Fencing:* Invicta Fencing Co.

**Flats at Gospel Oak** for the Borough of St. Pancras. *Architects:* Powell & Moya. *General con-*

[continued on page 280]



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continued from page 278]

tractor: Sir Robert McAlpine & Sons. Sub-contractors and Nominated suppliers: Basement tanking and felt roofing: Wm. Briggs & Sons. Asphalt paving and roofing: Excel Asphalte Co. Thermo-plastic tiling: Marley Tile Co. Lifts: Express Lift Co. Booster pumps for water supply: G. N. Haden Ltd. Electrical installation: Phoenix Electrical Co. (London) Ltd. Iron stair balustrades: S. W. Farmer & Sons. Private and access balcony fronts: F. A. Norris & Co. Estate lamp standards: T. W. Palmer (Merton Abbey) Ltd. Iron basement partitions: McLaren, Johnston & Co. Lightning conductor: W. J. Furse & Co. (London) Ltd. Flint lime bricks: Uxbridge Flint Brick Co. Blue engineering bricks: Stoneware Ltd. London stock bricks: Eastwoods Ltd. Terrazzo precast slabs: W. E. Simpson & Sons. Precast concrete: Girlings Ferro-Concrete Co. Cupboard doors: John Said & Sons. Windows and external doors: Walter Lawrence & Sons. Refuse chutes: Broads Mfg. Co. Cill tiles: McKenzie Brytles Ltd. Metal windows: Crittall Mfg. Co. Estate lighting reflectors: Benjamin Electric Ltd. Plate racks: Modern Industries (London) Ltd. Ironmongery: Alfred G. Roberts Ltd. Pre-stressed concrete floor joints: Costain Concrete Co. Hollow clinker infilling floor blocks: C.B.C. Construction Co. Gas equipment and back boilers: North Thames Gas Board. Chimney pots: Robinson & Dowler Ltd. Kitchen fittings: Jayanbee Joinery Ltd. Sanitary fittings: Stitons Sanitary Fittings Ltd. 'Stonite' rendered panels: New Floor Installations Ltd. Galvanized steel cold water storage tanks: Richard Thomas & Baldwins Ltd. 'Rocksil' insulating quilt water paint: Wm. Kenyon & Sons. Water paint: Walpamur Co. Oil paint: Hadfields (Merton) Ltd. Rubber based paint: Inertol Co. Nameplates: Hills Ltd. Cast iron bollards: Mather & Smith Ltd.

Shops at Richmond, Surrey. Architect: Eric Lyons. General contractors: Eden Residential Con-

struction Co. Sub-contractors: Dampcourses: The Ruberoid Co. Asphalt: Waderete Ltd. Reinforced concrete: Smiths Fireproof Floors Ltd. and O.B.O. Construction Co. Bricks: London Brick Co. (Stewart lights), J. W. Sergeant (red facings). Artificial stone: O.B.O. Construction Co. Structural steel metalwork: S. G. Day Ltd. Tile hanging: Wm. Sandfield Ltd. Roofing felt: Wm. Briggs & Co. Metal rooflights: Greenwoods & Airvac Ventilating Co. Patent flooring: Horsley Smith & Co. Gas fixtures: B. Finch & Co. and Radiation Ltd. Gasfitting: North Thames Gas Board. Electric wiring: F. C. Clover. Electric light fixtures: Merchant Adventurers of London Ltd., and Simplex Electric Ltd. Plumbing: Faithfull Bros. Ltd. Sanitary fittings: James W. Sergeant Ltd. Door furniture: Stedall & Co. Casements: Boulton & Paul Ltd. Metal staircase screen: Clement Bros. Bells: A. J. Binns Ltd. Kitchen fitments: Built-In Fixtures Ltd. External tiling: Carter & Co. Wallpapers: John Line & Son. Signs: The Lettering Centre.

Primary School at Oldbury, Worcs. Architects: F. R. S. Yorke, E. Rosenberg & C. S. Mardall. T. R. Evans, Associate-in-charge. J. G. Fryman, Assistant-in-charge, in association with F. W. B. Yorke and H. M. Barker. Consulting engineers: Messrs. Clark, Nicholls and Marcel. Heating consultants: Messrs. Oscar Faber & Partners. Quantity surveyor: Oswald A. Wainwright. General contractors: Edgar Crowder Ltd. Sub-contractors: Concrete blocks: Calcrete Ltd. Bricks: Himley Brick Co., London Brick Co., Richard Parton (Builders Merchants) Ltd. and Titford Brick Co. Stone: London & Sussex Merchants Ltd. Artificial stone: Constone. Structural steel, patent flooring: Hills (West Bromwich) Ltd. Asphalt, roofing felt and dampcourses: William Briggs & Sons. Glass: Pilkington Bros. and Chance Bros. Woodblock flooring: Vigers Bros. Central heating and water

supply: Rosser & Russell Ltd. Electric light fixtures: Merchant Adventurers of London Ltd. and Hailwood & Ackroyd Ltd. Ventilation fans: Vent Axia Ltd. Sanitary fittings: Stitons Sanitary Fittings Ltd. Stairtreads: Jacarells Ltd. Door furniture: Rennis Ltd. Metal casements and window furniture: Williams & Williams Ltd. Bells and clocks: Gent & Co. Sunblinds: Tidmarsh & Sons. Metalwork: The Birmingham Guild Ltd. Stonework: Messrs. Gornal Quarries. Tiling: R. G. Robertsons (Tiles) Ltd. Textiles: Gerald Holton. School fittings: Tylers (Architectural) Ltd. Cloakroom fittings: Clark Hunt & Co. Electric wiring: Etna Lighting & Heating Co.

Showroom in Regent Street, W. 1. Architects: Challen & Floyd. General contractors: Haskins (E. Pollard & Co.). Sub-contractors: Architectural panels: Wallis & Co. (Long Eaton). Bar fitments: Gaskell & Chambers Ltd. Carpets: Heals Contracts Ltd. and John Lewis & Co. Curtains: G. & C. Grant and Hilary Bourne & Barbara Allen. Electro magnetic signs: Roto Signs Ltd. Furniture: The Educational Supply Assoc. Ltd., S. Hille & Co. and G. & C. Grant. Glazing: Shepherd Tobias & Co. Ironmongery: A. J. Binns Ltd. Lighting fittings: Fluorel Ltd. and George Forrest & Son. Linoleum: Michael Nairn & Co. Metal display furniture: Page & Lambe. Planting: West End Flower House. Plastering: Tomei & Sons. Plumbing: W. H. Earley Ltd. Phyglass glazing: Plyglass Ltd. Portland stone: Chas. E. Ebbutt & Sons. Radio: Alfred Imhof Ltd. Roman stone: C. Walker & Co. Rubber tiles: The North British Rubber Co. Shower enclosure: W. N. Froy & Sons. Signs: Strand Electric & Eng. Co. Staircases: Hyders Ltd. Suspended ceilings: Anderson Construction Co. Terrazzo and tiling: Zanelli (London) Ltd. Thermo-plastic tiles: Marley Tile Co. Venetian blinds: Venetian Vogue Ltd. Ventilation: M. & J. Lossos & Co.

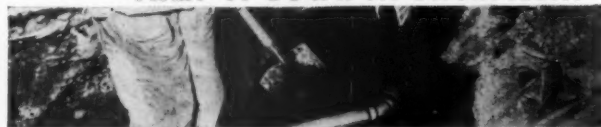
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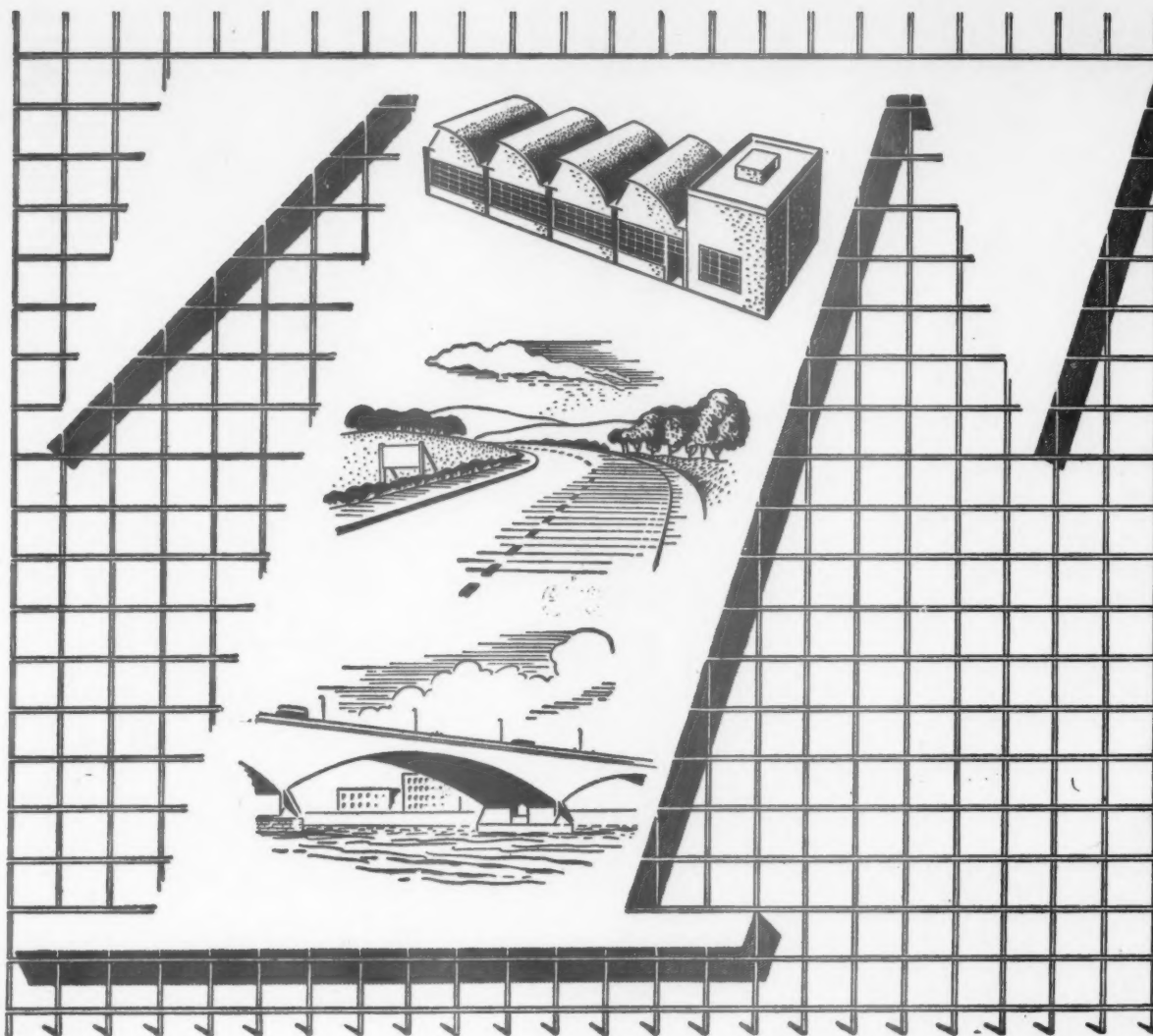
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